VEGAS Pro 23

File
Edit
View
Insert
Tools
Options
Help
Untitled - VEGAS Pro 23.0
VEGAS Hub Login
Event FX:
Filename
LUTs
Color Wheels
RL Color Wheels
Utilities
Curves
Threshold
Shadows
Midtones
Highlights
Offset
Best (Full)
100 %
Master
Explorer
Project Media
Media Generator
Transitions
Video FX
Color Grading
VEGAS Hub
Video Preview
Trimmer
Master Bus
00:00:20,00
Level: 100,0 %
Brightness and Contrast
Layer Dimensionality
Vol: 3,1 dB
Pan: Center
Rate: 1,00
Complete: 00:00:19
Record Time (2 channels): 1:04:21:55

English language manual

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What's New

VEGAS Pro 23

- Window Docking Areas

  New docking areas have been added at the bottom, right, and left edges of the interface. These docking areas function the same way as the existing docking locations, allowing windows to be organized more flexibly within the workspace.

  For more information, see Using and Managing Docking Areas

- Color Grading Window

  The Color Grading Panel has been modernized and redesigned as a dockable, responsive window. It supports pinned RGB and HSL curves, zoomable and pannable color curves, and enhanced color wheel controls for more precise adjustments.

  Camera LUTs for mobile formats

  Camera LUTs can be applied to interpret Log footage from mobile devices such as those from Apple or Samsung. This ensures that high-dynamic-range recordings are displayed with proper color and contrast during editing.

  For more information, see Color Grading

- Render Dialog

  The render dialog has been completely redesigned and renamed from "Render As" to simply "Render." It now features tree navigation, a use case section, and an option to display a reduced or full list of output formats.

  For more information, see Rendering your project

- Modern Equalizer

A new audio effect, the modernEQ VST plugin, is available for use in VEGAS Pro. It can be applied at the event, track, and master levels to provide advanced equalization options for audio editing.

For more information, see [Using the Modern Equalizer]

- Screen Capturing with VEGAS Capture

  Screen capturing has been replaced with a fully updated application. Users can add sources, which are organized by category, and configure recording quality either globally or per source.

  For more information, see [Screen Recording with VEGAS Capture]

- VFX packages

  Video effect chains can now be saved and reused as effects packages. These packages can be created and applied at the event, track, media, and video bus levels, simplifying access to complex effect setups.

  For more information, see [Managing Video FX Packages]

- Timeline OFX animation

  Video effects can now be animated directly in the timeline using OFX envelopes. This enables keyframing of effect parameters in the same way as audio or composite settings, streamlining animation workflows.

  For more information, see [Animate OFX keyframes on the timeline]

Getting Started

This chapter gives you a brief introduction to the basic functions and features in VEGAS Pro. A more detailed description of the program functions can be found in the following chapters.

Step 1: Getting to Know the Interface

Before you start working with VEGAS Pro, it's a good idea to familiarize yourself with the interface to understand how it fits your needs.

The User Interface

Welcome Screen

VIDEO *VEGAS Pro Interface Tour*

Step 2: Select and Import Media

Before you can start editing your video, select the media you want to use and import it into the project.

Adding media files to your project

VIDEO *VEGAS Pro The Basics*

Step 3: Cut and Edit Videos

Cutting and trimming video is a key step, since it lets you remove unwanted parts and tighten up your story.

Video Editing

VIDEO *VEGAS Pro The Basics*

Step 4: Optimize and Design

Once you've cut your videos, you can optimize and design them to make your movie more engaging for your audience. You have the option of adding various effects, correcting color and more to enhance your video.

Video Design and Optimization

VIDEO *VEGAS Pro Video FX*

VIDEO *VEGAS Pro Color Grading*

VIDEO *VEGAS Pro Titles and Text*

Step 5: Working with Audio

In addition to visual elements, audio plays a crucial role in creating an immersive experience. Learn how to edit and enhance your audio tracks to complement your video.

ℹ Audio Editing

VIDEO *VEGAS Pro Working with Audio*

Step 6: Export your Project

As a final step, you can export your video in a suitable format to share with or present to others.

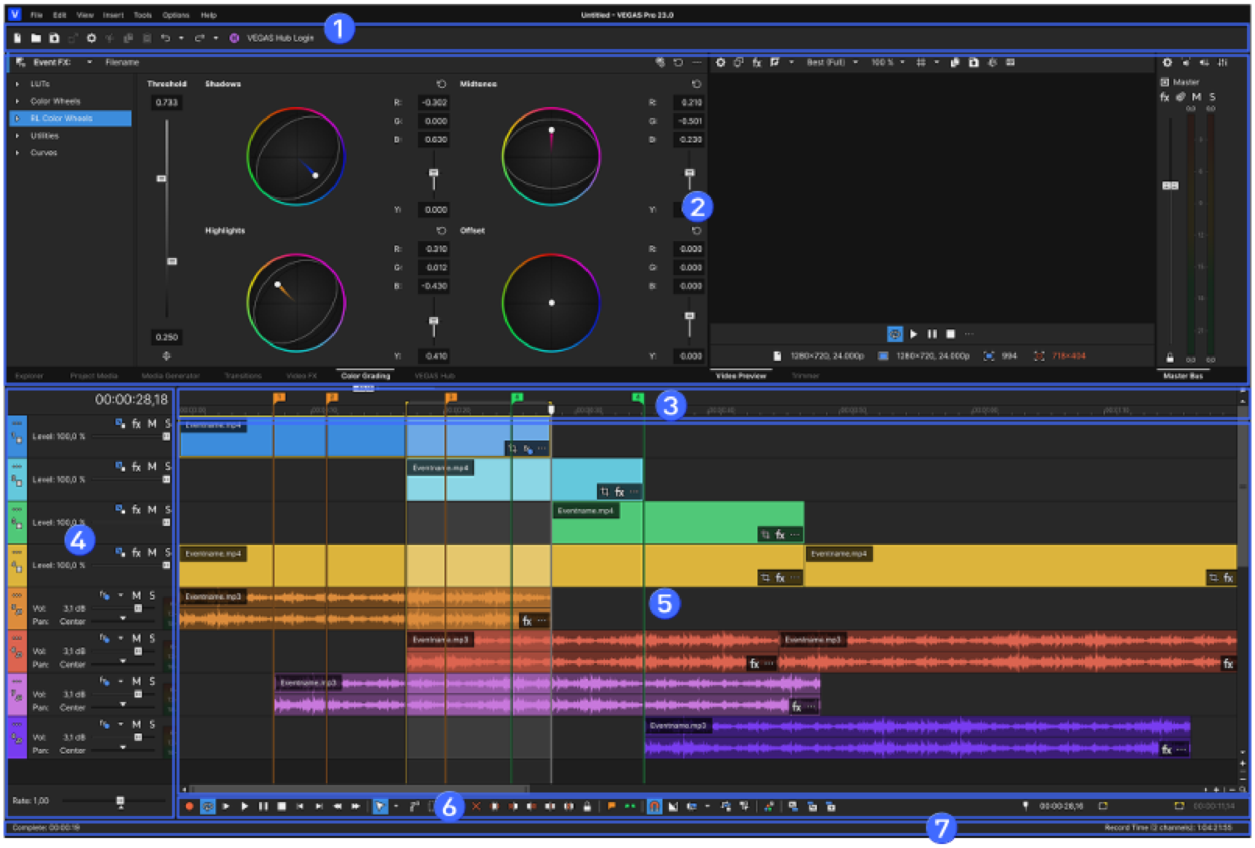
ℹ Exporting and sharing projects

VIDEO *VEGAS Pro Rendering*

Working with VEGAS Pro

The User Interface

The VEGAS® Pro window is where you edit your project, and the screen is divided into several areas.


File
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Midtones
Highlights
Offset
Best (Full)
100 %
Master
Explorer
Project Media
Media Generator
Transitions
Video FX
Color Grading
VEGAS Hub
Video Preview
Trimmer
Master Bus
00:00:28,18
Level: 100,0 %
Eventname.mp4
Eventname.mp3
Vol: 3,1 dB
Pan: Center
Rate: 1,00
Complete: 00:00:19
1
2
3
4
5
6
7

Element		More Information
1	Main Toolbar	» Main toolbar
2	Window Docking Area	» Window docking area and floating window docks
3	Ruler and Marker Bar	» Marker bar
4	Track List	» Track list
5	Timeline	» Timeline
6	Transport and Editing Toolbar	» Transport & Editing toolbar
7	Status Bar	

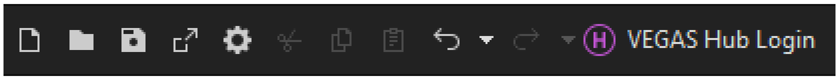
You can customize the VEGAS® Pro interface to suit your needs and working preferences.

For more information, see Customizing the VEGAS Pro interface

Main toolbar

From the View menu, choose TOOLBAR to toggle the display of the main toolbar.

The toolbar contains buttons that enable you to select frequently used commands quickly. You can customize it by adding, removing, or reordering buttons.



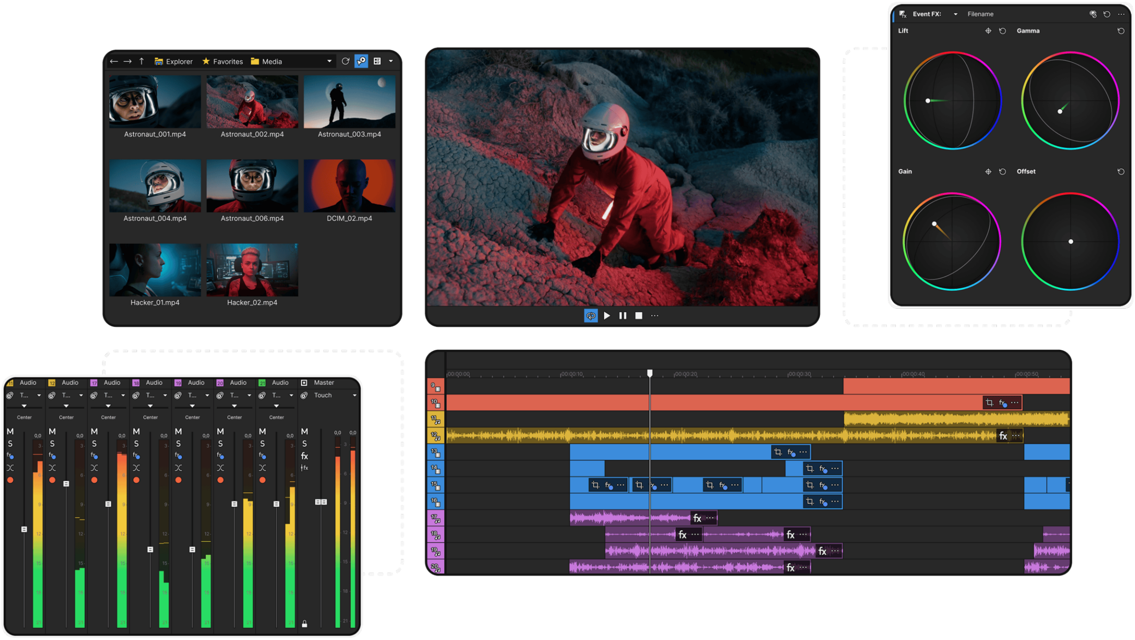
For more information, see Customizing the toolbar

Button	Name	Description	More information
🗋	New Empty Project	Creates a new blank project using the default settings.	Creating a new project
📁	Open	Opens an existing project or media file.	Opening a project or media file
💾	Save	Saves the current project.	Saving a project
⤢	Render As	Saves your project in a new format as a single file.	Rendering your project
⚙	Properties	Opens the Project Properties dialog box allowing you to make changes to the current project.	Setting project properties
✂	Cut	Deletes and copies the current event selection to the clipboard.	Cutting, copying, and pasting events
⧉	Copy	Copies the current event selection to the clipboard.	Cutting, copying, and pasting events
📋	Paste	Pastes the contents of the clipboard at the current cursor position.	Cutting, copying, and pasting events
↶	Undo	Reverses the last action performed.	Undoing and redoing edit operations
↷	Redo	Reverses the action of the UNDO command.	Undoing and redoing edit operations

Using and Managing Docking Areas

Docking areas are fixed zones along the edges of the VEGAS Pro interface where you can attach windows and panels. They provide structure and reduce clutter, making it easier to access tools while editing.

Windows can be docked to the top, bottom, left, or right edges, or placed in floating docks. You can arrange and resize these areas to suit different screen sizes and workflows, including dual-monitor setups.


Explorer
Favorites
Media
Astronaut_001.mp4
Astronaut_002.mp4
Astronaut_003.mp4
Astronaut_004.mp4
Astronaut_006.mp4
DCIM_02.mp4
Hacker_01.mp4
Hacker_02.mp4
Event FX:
Filename
Lift
Gamma
Gain
Offset
Audio
Master
Touch

USE CASES

- Dock the *Video Preview* window to the right side for better visibility.
- Dock both the *Color Grading* and *Video Scopes* windows at the bottom for quick access.
- Use split right docks to show scopes on top and a mixer at the bottom.
- For portrait projects, dock the *Preview* window on the right to create a tall, narrow preview.

Dock and undock windows

1. Click and drag a window by its title bar toward one of the four docking areas.
2. Hold Ctrl to override the behavior configured in ALLOW FLOATING WINDOWS TO DOCK.
3. A gray outline shows the target position. Release the mouse button to dock the window there.
4. Move the cursor near the splitter to open the target area, then fine-place the window. Drag the splitter to adjust width or height.
5. To undock, drag the window's tab away from the docking area; it becomes a floating window.

Sample Text
(Default)
EVENT
Action Flip
Drop Split
Dropping
Menace
Popup
Rough Day
Fly In
Jump
Slide Right
Slide Up

> **NOTE**
> **Hidden and collapsible** Docking areas remain hidden when empty and collapse automatically after the last window is removed.

Manage docked windows

- **Maximize or restore:** Click MAXIMIZE ▣ to expand the window, or RESTORE ⧉ to return to the previous size.
- **Show or hide a window:** Click CLOSE ☒ to hide it. To show it again, open VIEW > WINDOW and select the window.
- **Quickly return to the default layout:** Press Alt + D, D.

> **TIP**
> Floating docks and dual-monitor setups
>
> You can create floating docks to organize your workspace independently from the main VEGAS Pro window. These docks can float over the interface or—if you use a dual-monitor setup—on a secondary display.

Preferences for docking behavior

- **Allow floating windows to dock:** Go to OPTIONS > PREFERENCES > DISPLAY.
  - **Enabled:** Windows dock automatically when dragged.
  - **Disabled:** Windows only dock if you hold Ctrl while dragging.
- **Tab position in docked windows:** Go to OPTIONS > PREFERENCES > DISPLAY.
  - Enable POSITION TABS AT TOP OF DOCKED WINDOWS to place tabs at the top.
  - Disable the checkbox to place tabs at the bottom.

Keyboard shortcuts for docking areas

Function	Shortcut
Show/hide all docking areas	F11
Show/hide the top docking area	Alt + F11
Show/hide the bottom docking area	Alt + Ctrl + F11
Show/hide the right docking area	Ctrl + Shift + F11
Collapse/expand all track headers	Ctrl + F11
Maximize timeline (track headers + hide docks)	Ctrl + Alt + Shift + F11

Save and restore layouts

1. Arrange and dock your windows as needed.
2. Go to VIEW > WINDOW LAYOUTS > SAVE LAYOUT AS.
3. Enter a name and assign an optional shortcut.
4. Click OK to save the layout.

Saved layouts also include the current state and size of docking areas.

> **NOTE**
> Restoring custom dock size
>
> When you add a window back into a previously used docking area, VEGAS Pro automatically restores the custom height or width you set before the area collapsed.

FURTHER INFORMATION

- Customizing the VEGAS Pro interface
- Saving and recalling window layouts

The Explorer Window

Choose VIEW | WINDOW | EXPLORER to toggle the display of the EXPLORER window.

Like the Project Media window, you can use the Explorer window to view, preview, and add media files to your project.

The Explorer window lets you browse folders, preview media, and add items to your project in VEGAS Pro.

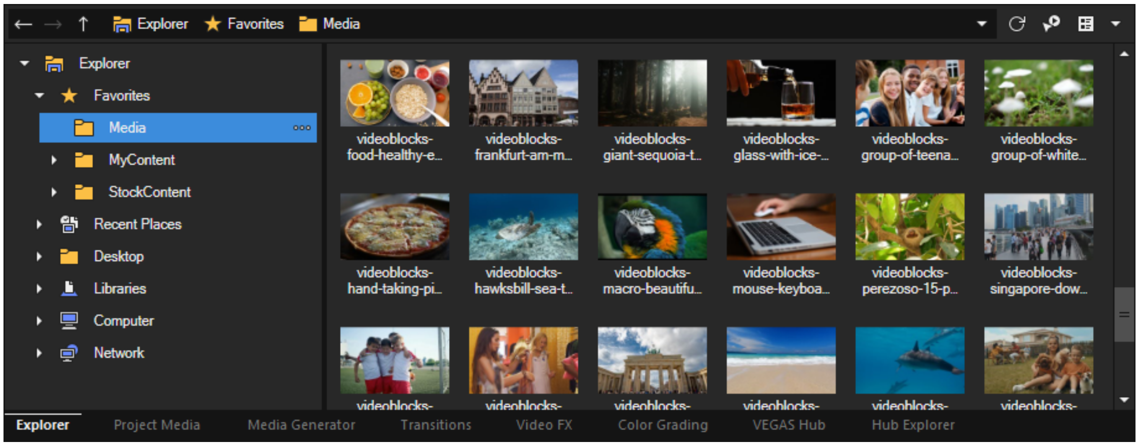

Explorer
Favorites
Media
Explorer
Favorites
Media
MyContent
StockContent
Recent Places
Desktop
Libraries
Computer
Network
videoblocks-food-healthy-e...
videoblocks-frankfurt-am-m...
videoblocks-giant-sequoia-t...
videoblocks-glass-with-ice-...
videoblocks-group-of-teena...
videoblocks-group-of-white...
videoblocks-hand-taking-pi...
videoblocks-hawksbill-sea-t...
videoblocks-macro-beautifu...
videoblocks-mouse-keyboa...
videoblocks-perezoso-15-p...
videoblocks-singapore-dow...
Explorer
Project Media
Media Generator
Transitions
Video FX
Color Grading
VEGAS Hub
Hub Explorer

FIGURE FIGURE *Explorer overview*

Browse and select media

- Use the folder **tree** on the left to navigate FAVORITES, local drives, and network locations.
- Select items in the **contents pane** on the right. Use standard multi-selection (Ctrl/Shift+click) as needed.
- Right-click an item to open the context menu for common actions.

Add media to your project

- **Add to Project Media:** Right-click a file and choose ADD TO PROJECT MEDIA, or click the **plus** icon that appears on the thumbnail.
- **Add to Timeline:** Right-click a file and choose ADD TO TIMELINE. You can also drag files directly onto the timeline.

Preview and trim

- **Start Preview:** Click START PREVIEW on a thumbnail or press `Enter`.
- **Auto Preview Play:** Toggle the AUTO PREVIEW PLAY button to play items automatically when you select them.
- **Trim:** Click TRIM on a thumbnail or choose it from the context menu (shortcut `Ctrl+T`) to open the file in the Trimmer for in/out selection.
- **Refresh view:** Click REFRESH VIEW to update the list after external file changes.

Change the view and sort

- Open the VIEW menu and choose LIST, DETAILS, or THUMBNAILS.
- Choose SORT BY to order items (for example by name, type, date, or size).

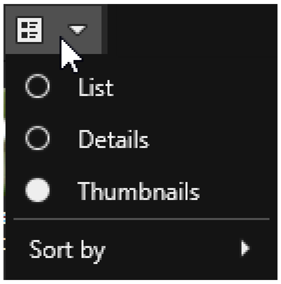


FIGURE FIGURE *View menu and sort options*

Manage favorites

- **Add to Favorites:** Right-click a folder in the tree or contents pane and choose ADD TO FAVORITES.
- **Remove from Favorites:** Right-click a favorite and choose REMOVE FROM FAVORITES.
- **Open in system file explorer:** Use EXPLORER… from the context menu to open the selected folder in the operating system’s file explorer.

> **NOTE**
> **About regions and markers** If you work with regions or markers inside a media file, use the Trimmer window. For details, see Using the Trimmer and Previewing media files.

Name	Item	Description
Back/Forward	← →	Use the BACK and FORWARD buttons to navigate the folder history.
Address Bar	1	Displays the path to the current folder.
Tree View	2	Displays all of the available files and folders where you can find media files.
Contents Pane	3	Displays the folders and media files contained in the active folder.
Up	⤴	Opens the folder one level above the active folder.
Refresh	↻	Refreshes the contents of the active folder. If you insert a new CD (or other removable media), click to refresh the Explorer.
Delete	✕	Deletes the selected folder or file.
Add to Favorites	★	Adds the selected folder to the Favorites folder in the tree view. The Favorites folder contains links to folders that you use most often.
Start Preview	▶	Plays the selected media file.
Stop Preview	■	Stops the playback of the selected media file.
Auto Preview	➚	Automatically preview media files when you click them in the Explorer window. For more information, see [Previewing media files](#)

Name	Item	Description
Views	▤	Allows you to change the way the files are viewed in the list view. ● DETAILS – Displays the file size, date and when the file was last created or last modified. ● LIST – Displays a simple list of the file name of each file in the Explorer window. ● THUMBNAIL – Displays the first frame of a video file. ● REGIONS – Displays any regions that have been defined in the selected media file. ● SUMMARY – Displays a short description of the selected media file at the bottom of the Explorer window. ● TREE – Displays all of the available drives and folders that you may choose from to find files. ● ALL FILES – Displays all file types in the active folder.

Adding regions from a file to the timeline

When REGIONS is selected in the Explorer window, any regions saved in the selected file are displayed in the bottom of the Explorer window.

You can drag a region to the timeline to create an event using a portion of a file.

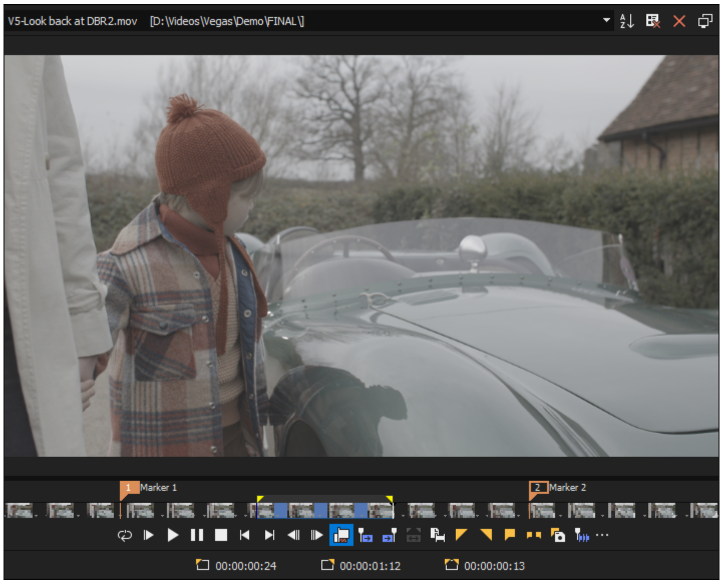
> **TIP** You can save regions and markers in a media file using the Trimmer window.
> For more information, see Using the Trimmer

» Click the down arrow ▾ next to the VIEWS button ▤ and choose REGIONS to toggle the display of regions in the Explorer window.

The Trimmer Window

The Trimmer window is a good place to edit any media file. When a media file is placed in the Trimmer window, you can place portions of the file on separate tracks by dragging and dropping.

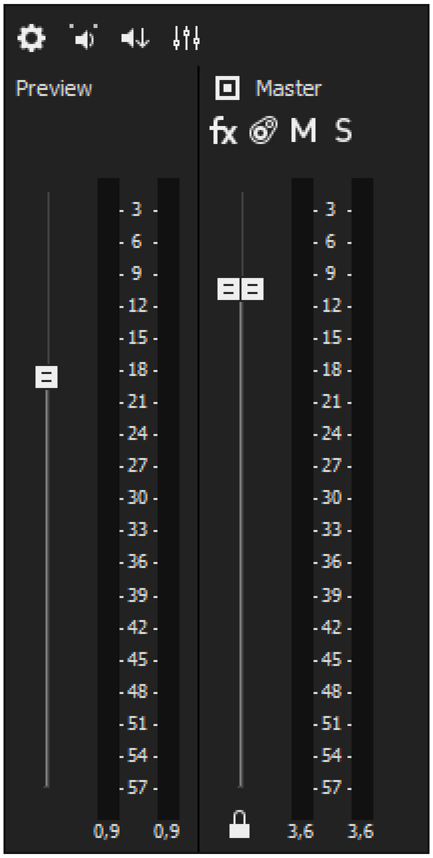
For more information, see Using the Trimmer


V5-Look back at DBR2.mov [D:\Videos\Vegas\Demo\FINAL\]
1 Marker 1
2 Marker 2
00:00:00:24
00:00:01:12
00:00:00:13

The Master Bus Window

The Master Bus window provides you with a streamlined view of your project's master output.

For more information, see Using the Master Bus Window


Preview
Master
fx
M
S
3
6
9
12
15
18
21
24
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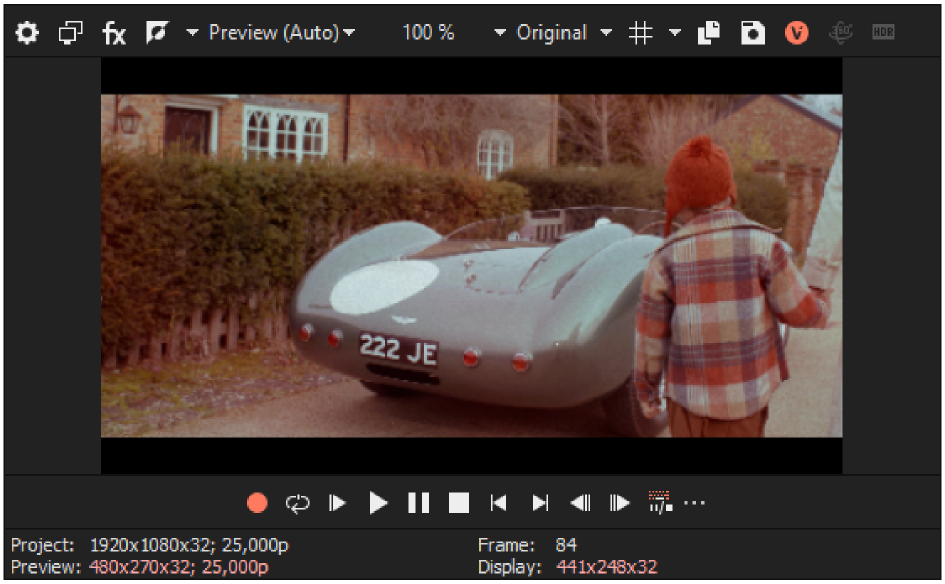
30
33
36
39
42
45
48
51
54
57
0,9
0,9
3,6
3,6

The Video Preview Window

Choose VIEW | WINDOW | VIDEO PREVIEW to toggle the display of the Video Preview window.
The Video Preview window displays a project's video output at the current cursor position during editing and playback. The playback includes any effects that you have applied to it. This window is also useful when editing frame by frame for synchronizing audio. Right-click anywhere in the window to display a shortcut menu with Video Preview window options.

For more information, see Using the Video Preview window



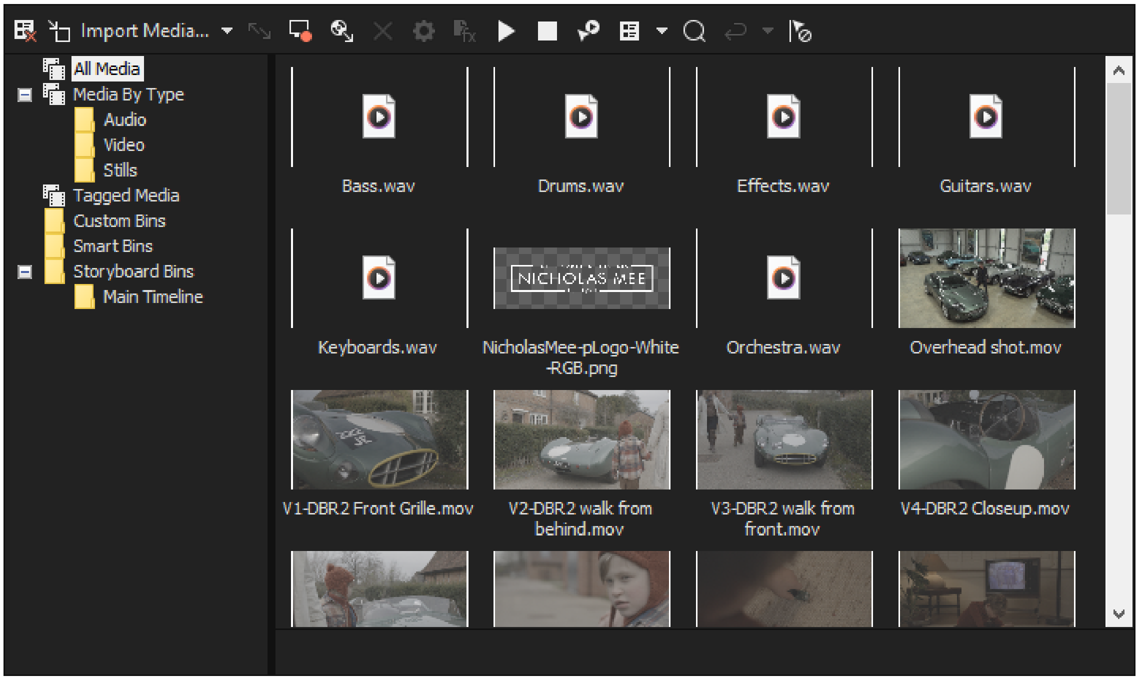
Project: 1920x1080x32; 25,000p
Preview: 480x270x32; 25,000p
Frame: 84
Display: 441x248x32

The Project Media Window

Choose VIEW | WINDOW | PROJECT MEDIA to toggle the display of the Project Media window.

You can use the Project Media window to collect and arrange all the media you will use in your project. You can add media, preview it, view and change file properties, and add effects to a file.

For more information, see Using the Project Media window.


Import Media...
All Media
Media By Type
Audio
Video
Stills
Tagged Media
Custom Bins
Smart Bins
Storyboard Bins
Main Timeline
Bass.wav
Drums.wav
Effects.wav
Guitars.wav
Keyboards.wav
NicholasMee-pLogo-White-RGB.png
Orchestra.wav
Overhead shot.mov
V1-DBR2 Front Grille.mov
V2-DBR2 walk from behind.mov
V3-DBR2 walk from front.mov
V4-DBR2 Closeup.mov

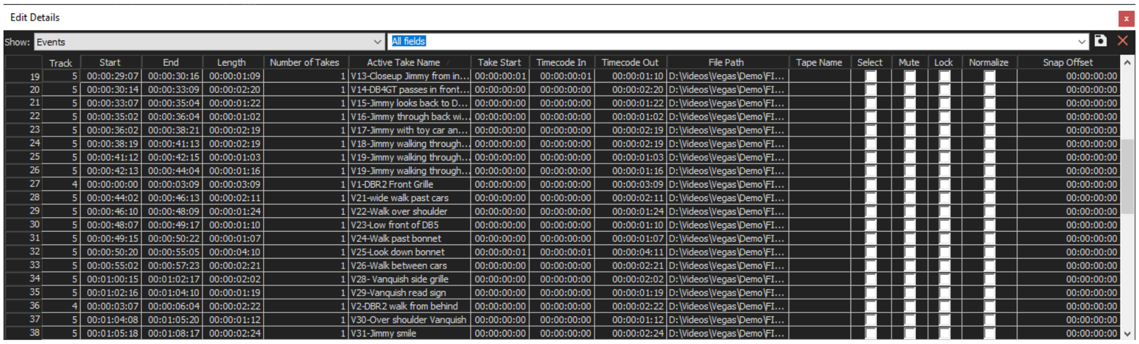
The Edit Details Window

Choose VIEW | WINDOW | EDIT DETAILS to toggle the display of the Edit Details window.

The Edit Details window displays a database for all of the media in your project. It shows information about how files in the project are being used and allows you to modify many of those properties. You may sort, add or change information, rearrange columns, and edit items in the project.

This window provides an alternate method for working with events, audio CD track lists, commands, markers, and regions.

For more information, see Using the Edit Details Window



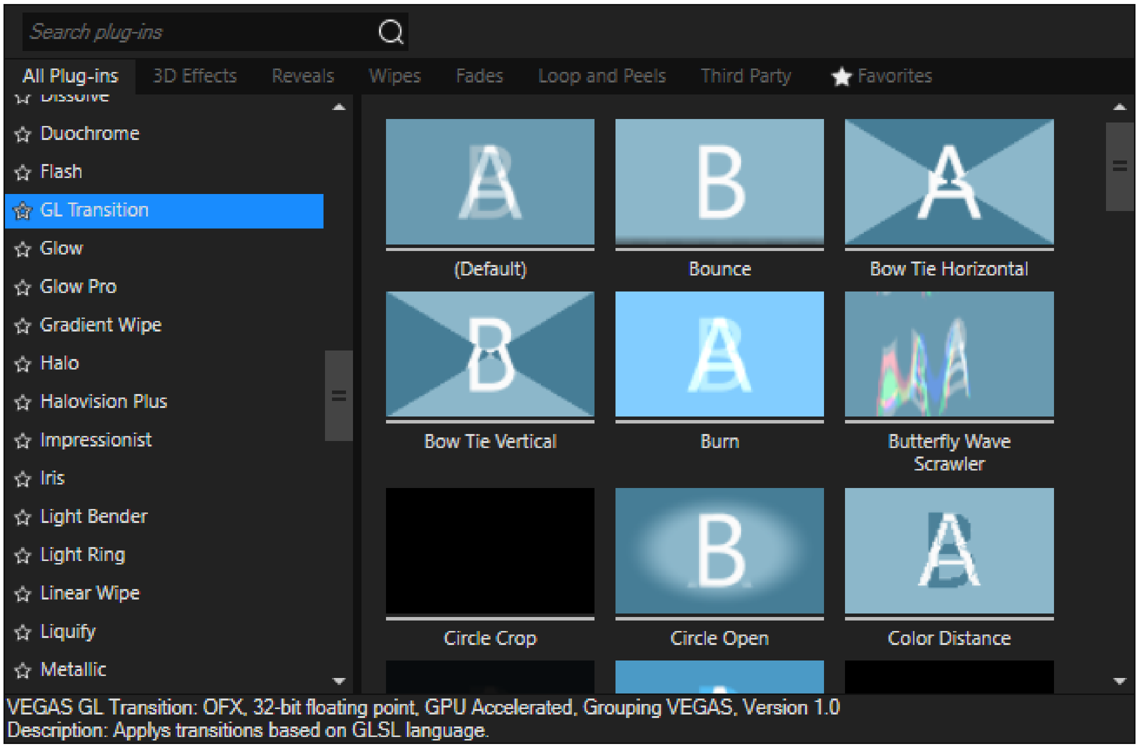
Edit Details

Show: Events | All fields

	Track	Start	End	Length	Number of Takes	Active Take Name	Take Start	Timecode In	Timecode Out	File Path	Tape Name	Select	Mute	Lock	Normalize	Snap Offset
19	5	00:00:29:07	00:00:30:16	00:00:01:09	1	V13-Closeup Jimmy from in…	00:00:00:01	00:00:00:01	00:00:01:10	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
20	5	00:00:30:14	00:00:33:09	00:00:02:20	1	V14-DB4GT passes in front…	00:00:00:00	00:00:00:00	00:00:02:20	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
21	5	00:00:33:07	00:00:35:04	00:00:01:22	1	V15-Jimmy looks back to D…	00:00:00:00	00:00:00:00	00:00:01:22	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
22	5	00:00:35:02	00:00:36:04	00:00:01:02	1	V16-Jimmy through back wi…	00:00:00:00	00:00:00:00	00:00:01:02	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
23	5	00:00:36:02	00:00:38:21	00:00:02:19	1	V17-Jimmy with toy car an…	00:00:00:00	00:00:00:00	00:00:02:19	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
24	5	00:00:38:19	00:00:41:13	00:00:02:19	1	V18-Jimmy walking through…	00:00:00:00	00:00:00:00	00:00:02:19	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
25	5	00:00:41:12	00:00:42:15	00:00:01:03	1	V19-Jimmy walking through…	00:00:00:00	00:00:00:00	00:00:01:03	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
26	5	00:00:42:13	00:00:44:04	00:00:01:16	1	V19-Jimmy walking through…	00:00:00:00	00:00:00:00	00:00:01:16	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
27	4	00:00:00:00	00:00:03:09	00:00:03:09	1	V1-DBR2 Front Grille	00:00:00:00	00:00:00:00	00:00:03:09	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
28	5	00:00:44:02	00:00:46:13	00:00:02:11	1	V21-wide walk past cars	00:00:00:00	00:00:00:00	00:00:02:11	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
29	5	00:00:46:10	00:00:48:09	00:00:01:24	1	V22-Walk over shoulder	00:00:00:00	00:00:00:00	00:00:01:24	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
30	5	00:00:48:07	00:00:49:17	00:00:01:10	1	V23-Low front of DB5	00:00:00:00	00:00:00:00	00:00:01:10	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
31	5	00:00:49:15	00:00:50:22	00:00:01:07	1	V24-Walk past bonnet	00:00:00:00	00:00:00:00	00:00:01:07	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
32	5	00:00:50:20	00:00:55:05	00:00:04:10	1	V25-Look down bonnet	00:00:00:01	00:00:00:01	00:00:04:11	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
33	5	00:00:55:02	00:00:57:23	00:00:02:21	1	V26-Walk between cars	00:00:00:00	00:00:00:00	00:00:02:21	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
34	5	00:01:00:15	00:01:02:17	00:00:02:02	1	V28- Vanquish side grille	00:00:00:00	00:00:00:00	00:00:02:02	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
35	5	00:01:02:16	00:01:04:10	00:00:01:19	1	V29-Vanquish read sign	00:00:00:00	00:00:00:00	00:00:01:19	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
36	4	00:00:03:07	00:00:06:04	00:00:02:22	1	V2-DBR2 walk from behind	00:00:00:00	00:00:00:00	00:00:02:22	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
37	5	00:01:04:08	00:01:05:20	00:00:01:12	1	V30-Over shoulder Vanquish	00:00:00:00	00:00:00:00	00:00:01:12	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
38	5	00:01:05:18	00:01:08:17	00:00:02:24	1	V31-Jimmy smile	00:00:00:00	00:00:00:00	00:00:02:24	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00

The Transitions Window

Choose VIEW | WINDOW | TRANSITIONS to display or hide the Transitions window. Use this window to choose and preview transition effects that you can use to control how a video event begins or ends, or to change the way one event flows into another.


Search plug-ins
All Plug-ins
3D Effects
Reveals
Wipes
Fades
Loop and Peels
Third Party
Favorites
Duochrome
Flash
GL Transition
Glow
Glow Pro
Gradient Wipe
Halo
Halovision Plus
Impressionist
Iris
Light Bender
Light Ring
Linear Wipe
Liquify
Metallic
(Default)
Bounce
Bow Tie Horizontal
Bow Tie Vertical
Burn
Butterfly Wave Scrawler
Circle Crop
Circle Open
Color Distance

VEGAS GL Transition: OFX, 32-bit floating point, GPU Accelerated, Grouping VEGAS, Version 1.0
Description: Applys transitions based on GLSL language.

At the top of the window you can see the available video effects organized into categories. In addition to categories such as FADES, WIPES or 3D EFFECTS, there are three special categories:

- ALL PLUG-INS: All available plug-ins are listed here.
- THIRD PARTY: Additionally installed third-party plug-ins are displayed here. If you select this category, an additional FILTER drop-down menu will appear in the upper right corner, where you can filter the third-party plug-ins by provider.
- FAVORITES: All plug-ins that you have marked as favorites are listed here. You mark a plug-in as a favorite by clicking on the little star in front of the plug-in name ☆.

The left pane lists each of the available transitions of the selected category. The thumbnail images in the right pane represent each of the existing presets for the selected transition. Hover your cursor over a preset to see an animated example.

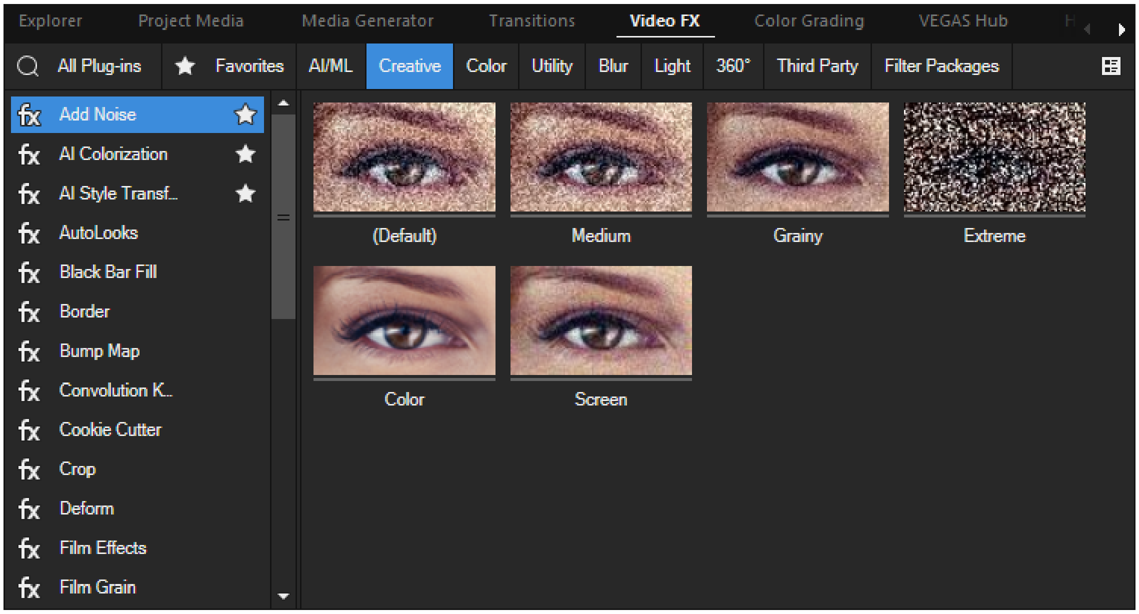
Drag a transition preset to overlapping video events in the timeline to add a transition.

You can type in the SEARCH PLUG-INS box to find plug-ins. For example, if you wanted to find a specific color-correction plug-in, you could type "color" in the box to display only plug-ins that include the term "color" in the plug-in name, description, or group name.

For more information, see Transitions

The Video FX Window

Choose VIEW | WINDOW | VIDEO FX to toggle the display of the Video FX window.


Explorer
Project Media
Media Generator
Transitions
Video FX
Color Grading
VEGAS Hub
All Plug-ins
Favorites
AI/ML
Creative
Color
Utility
Blur
Light
360°
Third Party
Filter Packages
Add Noise
AI Colorization
AI Style Transf...
AutoLooks
Black Bar Fill
Border
Bump Map
Convolution K...
Cookie Cutter
Crop
Deform
Film Effects
Film Grain
(Default)
Medium
Grainy
Extreme
Color
Screen

At the top of the window you can see the available video effects organized into categories. In addition to categories such as COLOR, LIGHT or UTILITY, there are three special categories:

All	All available plug-ins are listed here.
Third party:	Additionally installed third-party plug-ins are displayed here. If you select this category, an additional FILTER drop-down menu will appear in the upper right corner, where you can filter the third-party plug-ins by provider.
Favorites:	All plug-ins that you have marked as favorites are listed here. You mark a plug-in as a favorite by clicking on the little star in front of the plug-in name ☆ .

The left pane lists each of the available video effects of the selected category. The thumbnail images in the right pane represent each of the existing presets for the selected effect.

» Hover your cursor over a preset to see an animated example.

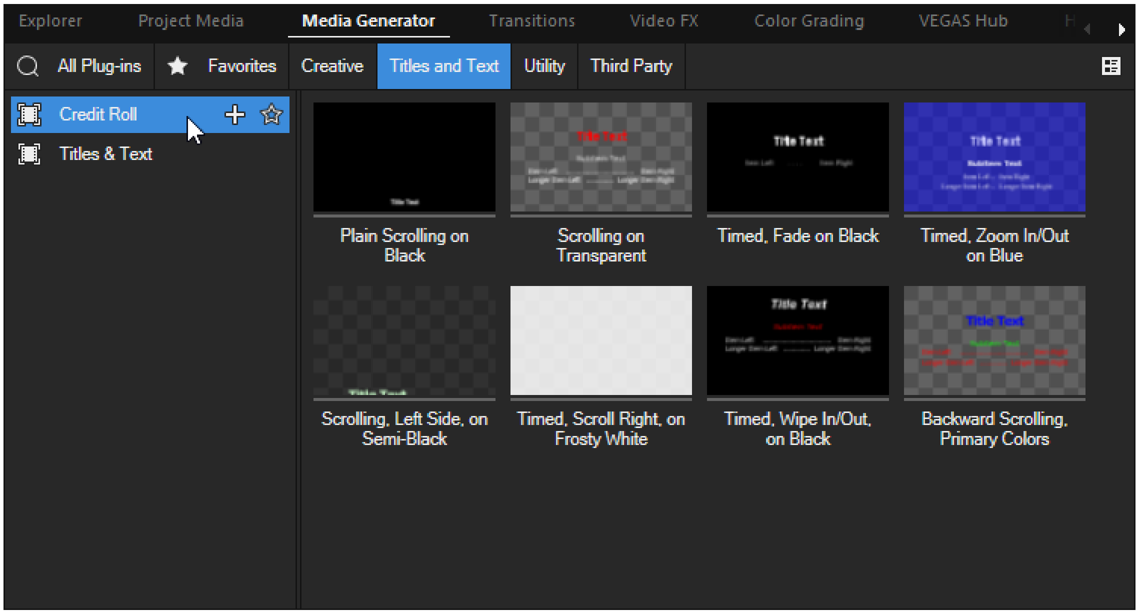
> **TIP** You can type in the SEARCH PLUG-INS box to find plug-ins. For example, if you wanted to find a specific color-correction plug-in, you could type "color" in the box to display only plug-ins that include the term "color" in the plug-in name, description, or group name.

You can drag a preset thumbnail to a track, event, or to the VIDEO PREVIEW window to apply the effect.

For more information, see Adding video effects

The Media Generators Window

Choose VIEW | WINDOW | MEDIA GENERATORS to toggle the display of the Media Generators window. You can use this window to add text, titles, backgrounds, and other generated media.


Explorer
Project Media
Media Generator
Transitions
Video FX
Color Grading
VEGAS Hub
All Plug-ins
Favorites
Creative
Titles and Text
Utility
Third Party
Credit Roll
Titles & Text
Plain Scrolling on Black
Scrolling on Transparent
Timed, Fade on Black
Timed, Zoom In/Out on Blue
Scrolling, Left Side, on Semi-Black
Timed, Scroll Right, on Frosty White
Timed, Wipe In/Out, on Black
Backward Scrolling, Primary Colors

At the top of the window you can see the available Media Generators organized into categories. In addition to categories such as CREATIVE GRAPHICS, TEXT AND TITLES or UTILITY, there are three special categories:

All plug-ins:	All available plug-ins are listed here.
Third party:	Additionally installed third-party plug-ins are displayed here. If you select this category, an additional FILTER drop-down menu will appear in the upper right corner, where you can filter the third-party plug-ins by provider.
Favorites:	All plug-ins that you have marked as favorites are listed here. You mark a plug-in as a favorite by clicking on the little star in front of the plug-in name ☆ .

The left pane lists each of the available media generators of the selected category. The thumbnail images in the right pane represent each of the existing presets for the selected effect. Hover your cursor over a preset to see an animated example.

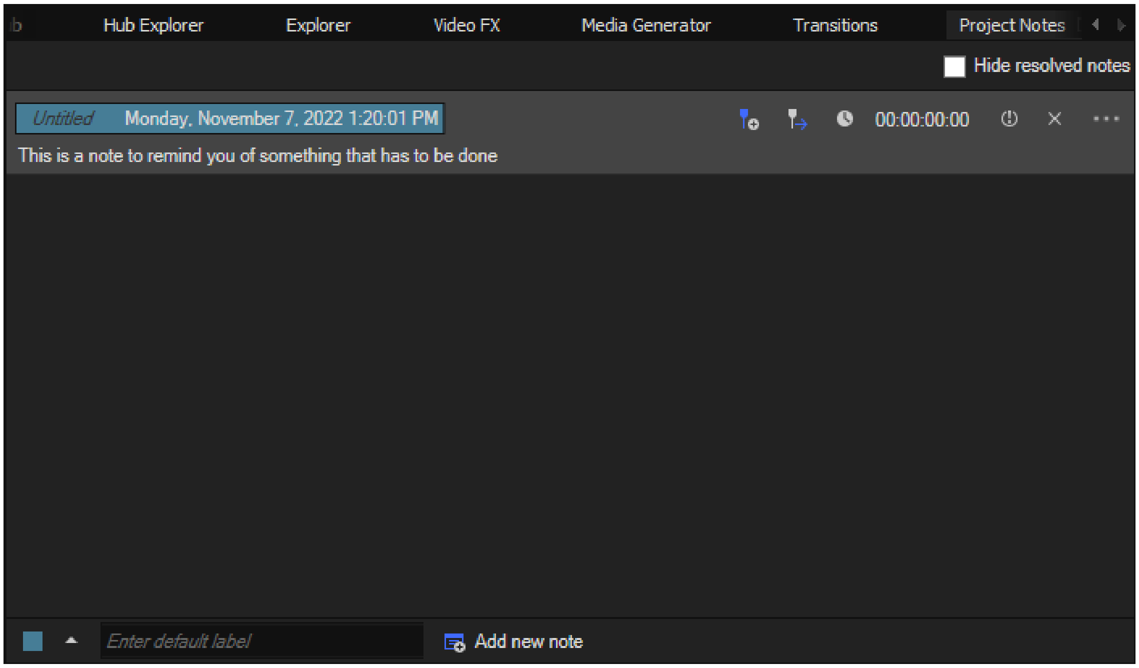
> **TIP** You can type in the SEARCH PLUG-INS box to find plug-ins. For example, if you wanted to find a specific color-correction plug-in, you could type "color" in the box to display only plug-ins that include the term "color" in the plug-in name, description, or group name.

You can drag a preset thumbnail to a track to add media.

ℹ For more information about using generated media, see [Adding generated media to your project]()

The Project Notes window

Project Notes allow VEGAS Pro editors to leave themselves notes in a project or to collaborate on a project and leave notes for each other along the way.


Hub Explorer
Explorer
Video FX
Media Generator
Transitions
Project Notes
Hide resolved notes
00:00:00:00
Enter default label
Add new note

Untitled Monday, November 7, 2022 1:20:01 PM

This is a note to remind you of something that has to be done

For more information, see [Creating Project Notes]

The Compositors Window

Choose VIEW | WINDOW | COMPOSITORS to toggle the display of the Compositors window. You can use this window to add compositing effects.

At the top of the window you can see the available compositors organized into categories. In addition to categories such as CREATIVE or UTILITIES there are three special categories:

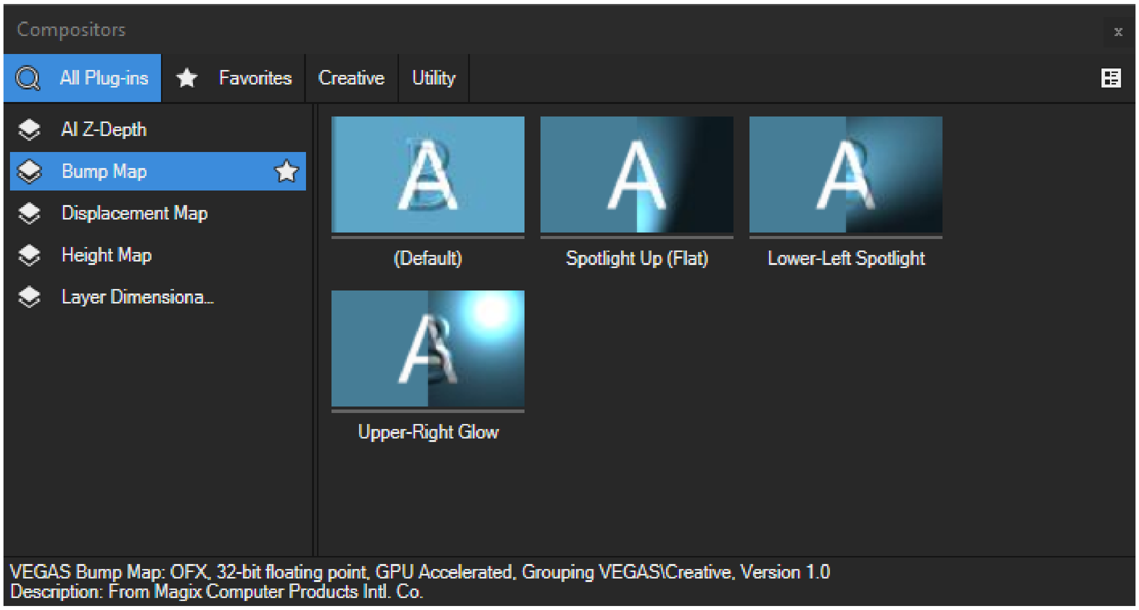
- ALL: All available plug-ins are listed here.
- THIRD PARTY: Additionally installed third-party plug-ins are displayed here. If you select this category, an additional FILTER drop-down menu will appear in the upper right corner, where you can filter the third-party plug-ins by provider.
- FAVORITES: All plug-ins that you have marked as favorites are listed here. You mark a plug-in as a favorite by clicking on the little star in front of the plug-in name ☆.

The left pane lists each of the available compositors of the selected category. The thumbnail images in the right pane represent each of the existing presets for the selected effect. Hover your cursor over a preset to see an animated example.

> **TIP** You can type in the SEARCH PLUG-INS box to find plug-ins. For example, if you wanted to find a specific color-correction plug-in, you could type "color" in the box to display only plug-ins that include the term "color" in the plug-in name, description, or group name.

You can drag a preset thumbnail to a track to add media.

For more information, see [Compositing and masks]()


Compositors
All Plug-ins
Favorites
Creative
Utility
AI Z-Depth
Bump Map
Displacement Map
Height Map
Layer Dimensiona...
(Default)
Spotlight Up (Flat)
Lower-Left Spotlight
Upper-Right Glow

VEGAS Bump Map: OFX, 32-bit floating point, GPU Accelerated, Grouping VEGAS\Creative, Version 1.0
Description: From Magix Computer Products Intl. Co.

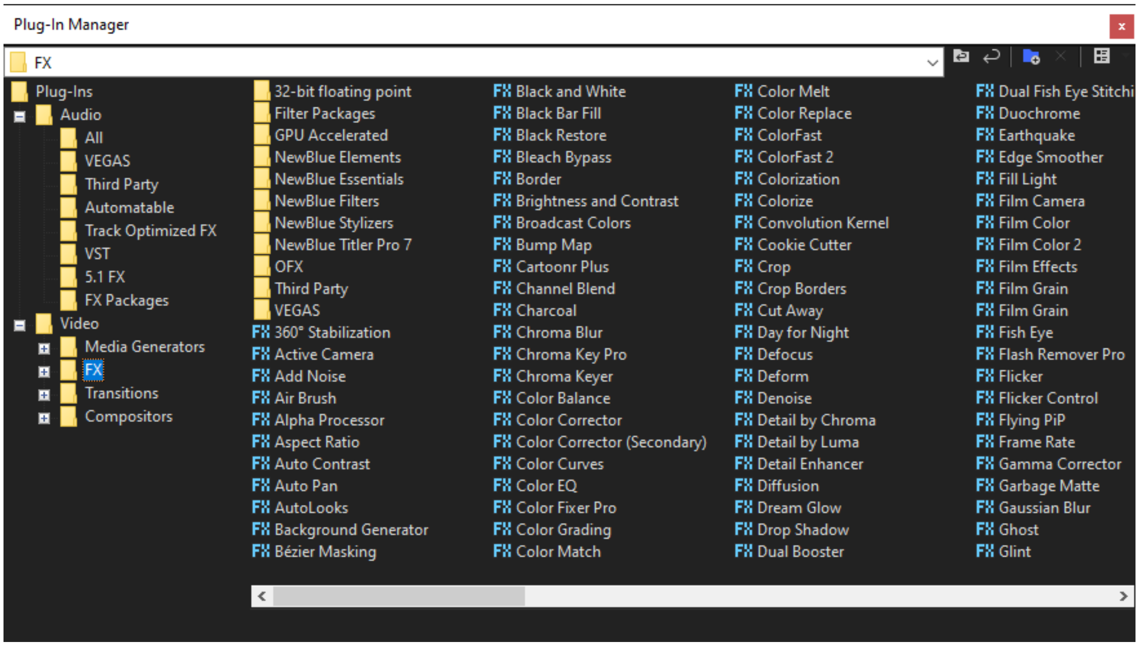
The Plug-In Manager Window

Choose VIEW | WINDOW | PLUG-IN MANAGER to toggle the display of the **Plug-In Manager** window.

You can use this window to access effects and effects packages that can be applied to events, tracks, and buses. This window also allows you to rename and reorganize plug-ins.

For more information, see [Applying effects]()

> **TIP** To add effects quickly, you can drag plug-ins and plug-in packages from the **Plug-In Manager** window to events, tracks, buses, and the Audio Plug-In, Video FX, or Video Preview windows.



Plug-In Manager

FX

- Plug-Ins
  - Audio
    - All
    - VEGAS
    - Third Party
    - Automatable
    - Track Optimized FX
    - VST
    - 5.1 FX
    - FX Packages
  - Video
    - Media Generators
    - FX
    - Transitions
    - Compositors

32-bit floating point
Filter Packages
GPU Accelerated
NewBlue Elements
NewBlue Essentials
NewBlue Filters
NewBlue Stylizers
NewBlue Titler Pro 7
OFX
Third Party
VEGAS
360° Stabilization
Active Camera
Add Noise
Air Brush
Alpha Processor
Aspect Ratio
Auto Contrast
Auto Pan
AutoLooks
Background Generator
Bézier Masking
Black and White
Black Bar Fill
Black Restore
Bleach Bypass
Border
Brightness and Contrast
Broadcast Colors
Bump Map
Cartoonr Plus
Channel Blend
Charcoal
Chroma Blur
Chroma Key Pro
Chroma Keyer
Color Balance
Color Corrector
Color Corrector (Secondary)
Color Curves
Color EQ
Color Fixer Pro
Color Grading
Color Match
Color Melt
Color Replace
ColorFast
ColorFast 2
Colorization
Colorize
Convolution Kernel
Cookie Cutter
Crop
Crop Borders
Cut Away
Day for Night
Defocus
Deform
Denoise
Detail by Chroma
Detail by Luma
Detail Enhancer
Diffusion
Dream Glow
Drop Shadow
Dual Booster
Dual Fish Eye Stitchi
Duochrome
Earthquake
Edge Smoother
Fill Light
Film Camera
Film Color
Film Color 2
Film Effects
Film Grain
Film Grain
Fish Eye
Flash Remover Pro
Flicker
Flicker Control
Flying PiP
Frame Rate
Gamma Corrector
Garbage Matte
Gaussian Blur
Ghost
Glint

The Video Scopes Window

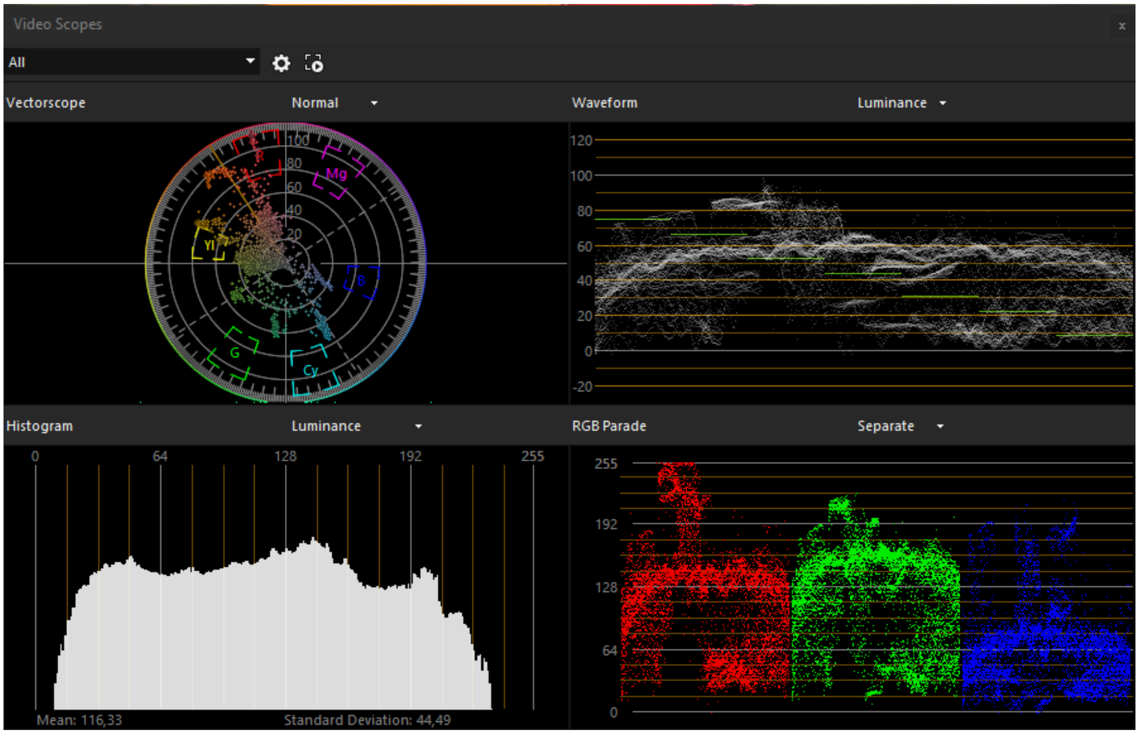
Choose VIEW | WINDOW | VIDEO SCOPES to toggle the display of the Video Scopes window in VEGAS® Pro.

Broadcast video uses a narrower range of color than the RGB you see on your computer. When you broadcast a project that contains out-of-gamut (out-of-range) colors, you can introduce image problems or even noise into the audio stream.

Use the scopes to analyze your video and adjust accordingly with the Brightness and Contrast, Broadcast Colors, Color Corrector, Color Corrector (Secondary), and Levels plug-ins before rendering.

Choose a setting from the drop-down list to choose which scope you want to display.

For more information, see [Monitoring video with scopes]


Video Scopes
All
Vectorscope
Normal
Waveform
Luminance
100
80
60
40
20
R
Mg
Yl
B
G
Cy
120
100
80
60
40
20
0
-20
Histogram
Luminance
0
64
128
192
255
RGB Parade
Separate
255
192
128
64
0

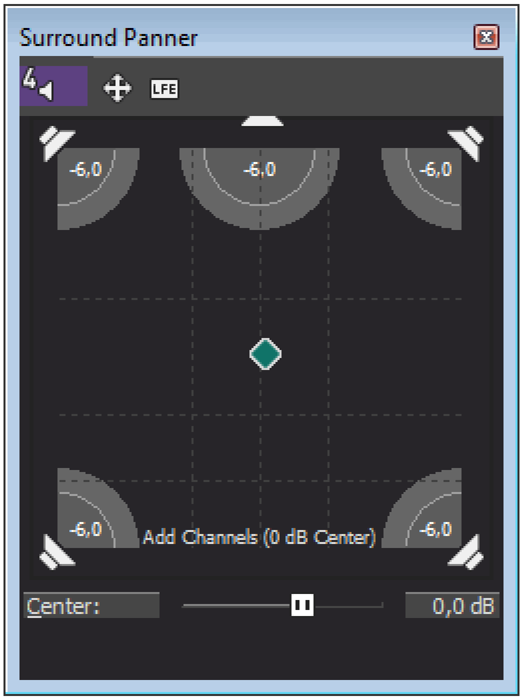
Mean: 116,33

Standard Deviation: 44,49

The Surround Panner Window

Choose VIEW | WINDOW | SURROUND PANNER to toggle the display of the Surround Panner window. Use the Surround Panner window to pan tracks, busses, and assignable effects chains.

For more information, see 5.1 surround projects

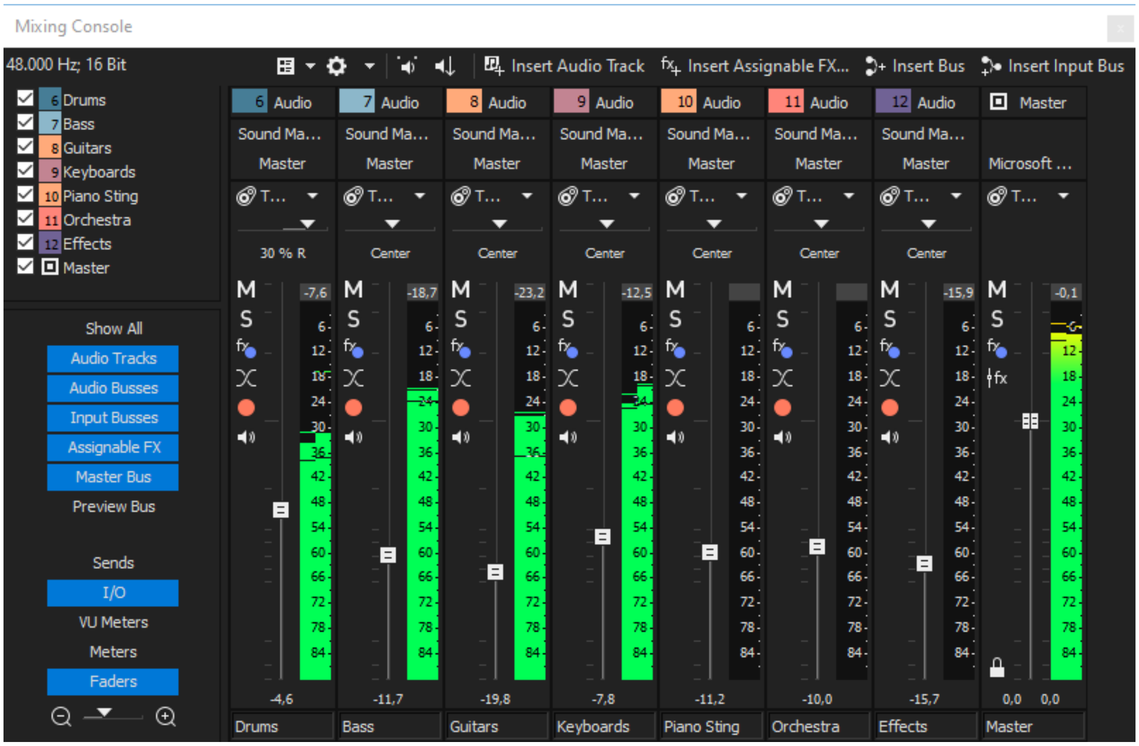

Surround Panner
LFE
-6,0
-6,0
-6,0
-6,0
-6,0
Add Channels (0 dB Center)
Center:
0,0 dB

The Mixing Console Window

Choose VIEW | WINDOW | MIXING CONSOLE to display the Mixing Console window.

The Mixing Console window provides an integrated view of all tracks and busses in your project using the appearance of a traditional hardware-based mixer.

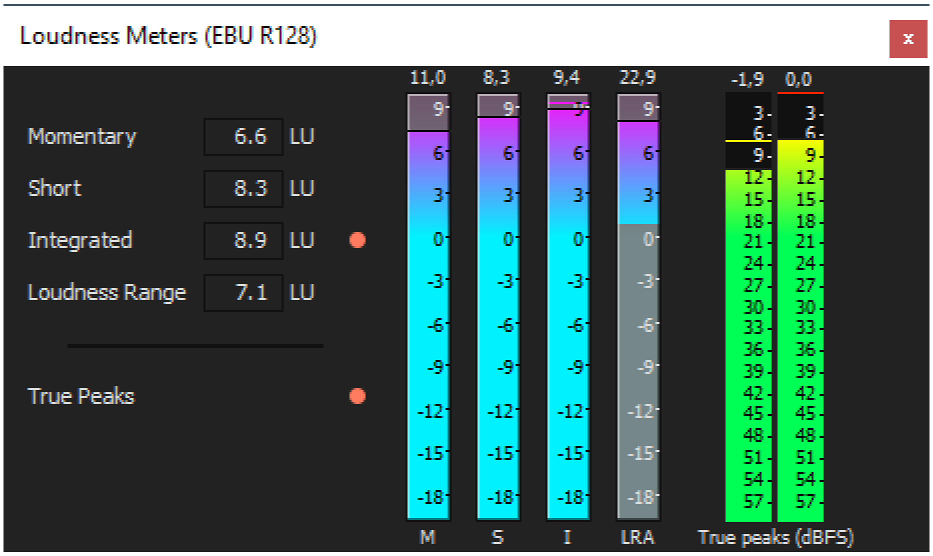
For more information, see The Mixing Console


Mixing Console
48.000 Hz; 16 Bit
Insert Audio Track
Insert Assignable FX...
Insert Bus
Insert Input Bus
6 Drums
7 Bass
8 Guitars
9 Keyboards
10 Piano Sting
11 Orchestra
12 Effects
Master
Show All
Audio Tracks
Audio Busses
Input Busses
Assignable FX
Master Bus
Preview Bus
Sends
I/O
VU Meters
Meters
Faders
6 Audio
7 Audio
8 Audio
9 Audio
10 Audio
11 Audio
12 Audio
Master
Sound Ma...
Microsoft ...
30 % R
Center
-7,6
-18,7
-23,2
-12,5
-15,9
-0,1
-4,6
-11,7
-19,8
-7,8
-11,2
-10,0
-15,7
0,0
0,0
Drums
Bass
Guitars
Keyboards
Piano Sting
Orchestra
Effects
Master

Loudness meters

Choose VIEW | WINDOW | LOUDNESS METERS to display the Loudness Meters window.

The Loudness Meters provide data about an audio file's momentary loudness, short-term loudness, integrated (overall) loudness, and loudness range. You can use these values when mastering for broadcast to ensure compliance with loudness standards (such as the CALM Act).



Momentary 6.6 LU

Short 8.3 LU

Integrated 8.9 LU

Loudness Range 7.1 LU

True Peaks

The meters display real-time values for each of the following measurements:

- The M meter represents the momentary loudness — in loudness units (LU) — across all audio channels based on 400-millisecond integration windows. The MOMENTARY box displays a numeric representation of the momentary loudness.
- The S meter represents the short-term loudness — in loudness units — across all audio channels based on 3-second integration windows. The SHORT box displays a numeric representation of the short-term loudness.
- The I meter represents the integrated loudness — in loudness units — across all audio channels over the duration of the program. The INTEGRATED box displays a numeric representation of the integrated loudness and includes an over-target indicator.
- The LRA meter represents the loudness range — in loudness units — of the momentary and short-term levels. The LOUDNESS RANGE measurement provides a standardized method of determining the dynamic range of the signal.
- The TRUE PEAKS meter represents the peak levels in dB FS. True peaks are calculated using a higher sample rate than peaks in the Master Bus window for increased accuracy.

  The True Peaks indicator shows you whether the target loudness has been exceeded. The indicator is reset when you restart playback, or you can right-click the Loudness Meters window and choose RESET CLIP from the shortcut menu.

The statistics on the left side of the window display the last-calculated values and are reset when you restart playback. You can reset the values by right-clicking the Loudness Meters window and choosing RESET METERING ENGINE from the shortcut menu.

> **TIP**
> Loudness is recalculated whenever you start, stop, seek, or change playback direction. If you want to force a recalculation, right-click the window and choose RESET METERING ENGINE from the shortcut menu.
>
> When the MASTER BUS MODE drop-down list on the Audio tab of the Project Properties dialog is set to 5.1 SURROUND, surround processing is applied when measuring loudness (a gain of ~1.5 dB is applied to the left and right surround channels). When the MASTER BUS MODE drop-down list is set to STEREO, all channels contribute equally to the loudness measurement.

Choosing a metering mode

To change the mode of the meters, choose OPTIONS | LOUDNESS METERS, and then choose EBUR 128 MODE or ATSCA 85 MODE from the submenu (you can also right-click the meter to set its options).

- When using EBU R 128, the target value of the INTEGRATED meter is -23 LUFS, and the maximum TRUE PEAK value is -1.0 dB FS. Use this mode when you're mastering toEuropean Broadcasting Union (EBU) standards.
- When using ATSC A 85, the target value of the INTEGRATED meter is -24 LUFS, and the maximum TRUE PEAK value is -2.0 dB FS. Use this mode when you're mastering toNorth American Advanced Television Systems Committee (ATSC) standards.

The over-target indicators will be triggered if the targetvalues for INTEGRATEDand TRUE PEAKSmeters are exceeded.

Choosing a loudness scale

To change the scale of the meter, choose OPTIONS | LOUDNESS METERS | LOUDNESS SCALE, and then choose EBU+9 or EBU +18from the submenu (you can also right-click the meter to set its options).

- When using EBU+9, the meters are displayed with a range of -18 to +9 LU.
- When using EBU+18, the meters are displayed with a range of -36 to +18 LU.

  > **NOTE** Choosinga wide range allows you to see low-level signals at the expense of precisiondisplay at high levels.

Select ABSOLUTE (-23 LUFS) if you want to display loudness values as Loudness UnitsFull Scale (LUFS). When ABSOLUTE(-23 LUFS) is not selected, all values are expressed as LoudnessUnits (LU) relative to the selected mode (EBUR 128 MODE or ATSCA 85 MODE).

Configuring peak meters

To toggle the True Peaks meters in the Loudness Meters window,choose OPTIONS | LOUDNESS METERS | SHOW TRUE PEAK METER(you can also right-click the meter to set its options).

> **TIP** Please note that true peaks arecalculated using a higher sample rate than peaks in theMaster Bus window for increased accuracy.

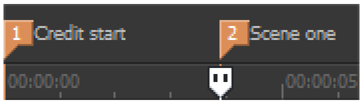
Peak levels may be miscalculated if audio signals are asymmetricalor if a DC offset is present. To enable filtering, choose OPTIONS | LOUDNESS METERS | TRUE PEAK BLOCKING FILTER. When TRUEPEAK BLOCKING FILTER is selected, peaks are calculated as the maximumof the filtered and unfiltered signals.

> **NOTE** Choosing a wide range allows you to see low-level signals at the expense of precision display at high levels.

Marker Bar

The marker bar displays markers that you add to your project. Markers are a handy way to ease navigation in the timeline. They can be used to indicate sections of projects, or you can use markers as snap points for editing.

For information about inserting markers, see Inserting markers


1 Credit start
2 Scene one
00:00:00
00:00:05

A shortcut menu is displayed when you right-click the marker bar:

Item	**Description**
LOOP PLAYBACK	Sets the time selection range to repeat the music when played.
SET SELECTION TO VIEW	Sets the loop region to the visible edges of the timeline. If the entire project is displayed, the loop region is set to the ends of the project.
SET SELECTION TO PROJECT	Sets the loop region to the ends of the project.
SELECT LOOP REGION	Creates a time selection based on the current loop region.
Markers/Regions	Choose a command from the submenu to add or delete markers or regions. For more information, see Inserting markers and Inserting regions
QUANTIZE TO FRAMES	Forces edits to occur on frame boundaries. For more information, see Quantize to frames
ENABLE SNAPPING	When snapping is enabled, the SNAP TO GRID and SNAP TO MARKERS commands become available. For more information, see Enable snapping
SNAP TO GRID	Select this command to force elements in the timeline to snap to the grid. The grid is defined in units of time. For more information, see Enable snapping
SNAP TO MARKERS	Select this command to force elements in the timeline to snap to markers. For more information, see Enable snapping

Item	Description
SNAP TO ALL EVENTS	Select this command to force elements in the timeline to snap to the ends of events on other tracks. For more information, see Enable snapping
GRID SPACING	Choose a command from the submenu to set the spacing of vertical grid lines along the timeline.
SELECTIVELY PRERENDER VIDEO	Opens the Prerender Video dialog, where you can create a full-quality preview of your project as it will appear in its final form. For more information, see Selectively prerender video
CLEAN UP PRERENDERED VIDEO	Removes the temporary files created as a result of using the SELECTIVELY PRERENDER VIDEO command. For more information, see Cleaning up prerendered video files

Track List

The Track List is the vertical area on the left side of the timeline that lists all tracks in your project and provides quick access to their controls. It belongs to the timeline view.

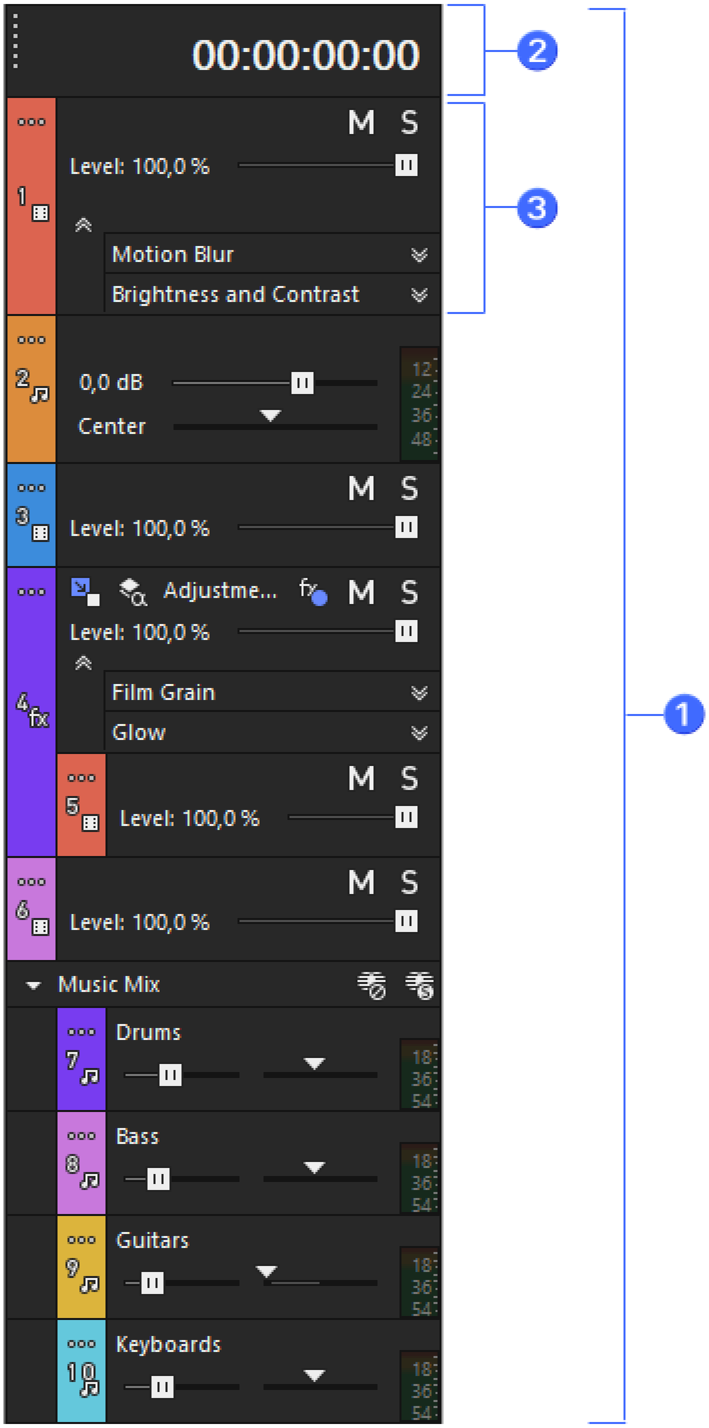

00:00:00:00
M S
Level: 100,0 %
Motion Blur
Brightness and Contrast
0,0 dB
Center
Adjustme...
Film Grain
Glow
Music Mix
Drums
Bass
Guitars
Keyboards
1
2
3

FIGURE *Timeline overview with numbered callouts*

1	Track List	Left column of the timeline that contains all track headers.
2	Time Display	Shows the current time/timecode above the timeline.
3	Track Header	Control strip of a single track inside the Track List. Use **More** (⁝) to manage visible buttons. ℹ See [Audio track controls](#)and [Video track controls](#).

Track Headers

The Track Headers are designed to be less cluttered and take up less screen real estate.

Use the More button ⋯, located just above the track number in the track header, to access buttons that are not displayed or to choose which buttons are visible by default.

Access a hidden button.

» Click **More** ⋯ to open the menu, then select the command that corresponds to the button you need.

Add or remove buttons in the header

» Click **More** ⋯ and choose EDIT VISIBLE BUTTON SET. Enable or disable the check boxes for the buttons you want to show, then click OK.

Show or hide all buttons at once

» Click **More** ⋯ > EDIT VISIBLE BUTTON SET, then click SHOW ALL or HIDE ALL and confirm with OK.

> **NOTE**
> To reset the buttons displayed on the Track Header to the factory defaults, choose VIEW WINDOW LAYOUTS | DEFAULT LAYOUT (Alt+D, D).
>
> > **IMPORTANT**
> > This resets the **entire application layout**, not just the Track Header defaults.

Switch between track header states

When you need to free up as much screen/track real estate as possible, you can quickly switch between full, minimal, and very minimal header states.

1. Click **More** ⋯ and choose EDIT VISIBLE BUTTON SET, then click HIDE ALL and OK.
2. Repeat for both audio and video tracks. You now see only the **faders** and **pan** controls.
3. Place the cursor on the **vertical border** between the track headers and the tracks.

   When the mouse pointer changes to a double-headed arrow, drag left until only the track numbers and the More button are visible.

   To return to the default Track Header size, drag the border back to the right or double-click the border.

> **NOTE**
> You don’t need to hide all the buttons for this to work. As you drag the Track Header border to the left, it automatically hides buttons. You can always access hidden buttons via MORE⋯.
>
> Double-clicking the border toggles between full Track Header width and just the track color bars.

Time Display

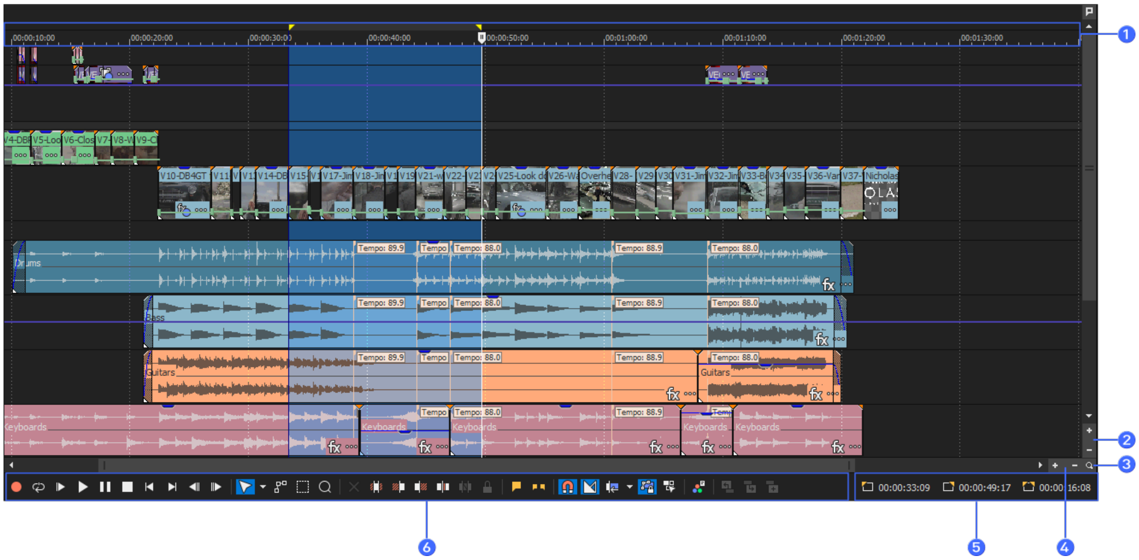
The Time Display window shows the current cursor position, MTC input, MTC output, or MIDI clock output time.

» Right-click the window and choose a command from the submenu to change the display format.

Item	Description
Time at Cursor	Displays the current cursor position using the current time format.
MIDI Timecode In	Displays incoming MIDI timecode. For more information, see Trigger from MIDI Timecode
MIDI Timecode Out	Displays outgoing MIDI timecode. For more information, see Generate MIDI Timecode
MIDI Clock Out	Displays outgoing MIDI clock. For more information, see Generate MIDI Clock
Time Format	Choose TIME FORMAT and choose a setting from the submenu to set the time units used in the Time Display and Time Ruler. For more information, see Time ruler
Text Color	Choose CUSTOM to specify the color that will be used to display the text in the window.
Background Color	Choose CUSTOM to specify the color that will be used to display the background of the window. **NOTE** Changing the Time Display window colors affects only the current color scheme. You can change the color scheme on the Display tab of the Preferences dialog.

Timeline

The timeline is the main part of the VEGAS Pro window where you will be doing most of your work. The majority of the window consists of actual track space. This area contains the drawn events on each track.



1	Time ruler
2	Track height control
3	Zoom tool
4	Time zoom control
5	Length boxes
6	Transport and Editing toolbar

> **TIP** You can choose EDIT | NAVIGATE and choose a command from the submenu to navigate the timeline quickly.

1 Time ruler

Displays the time in the format you select.

For more information, see Time ruler

2 Track height control

Click + to increase the height of the tracks, or click - to decrease track height.

> **TIP** You can also click in the space between the + and - buttons and drag vertically for adjusting track height.

3Zoom tool

Click the ZOOM TOOL button 🔍 in the corner of the timeline to temporarily change the cursor into the Zoom tool. Select an area of the timeline that you want to magnify, and the cursor will revert to the previously active tool.

> **TIP**
> Vertical scroll bar
>
> Double-clicking the vertical scroll bar will zoom the project out so that as many tracks as possible will be displayed.
>
> Horizontal scroll bar
>
> Drag the scroll box to pan the view of the project left or right. The ends of the scroll bar also function as zoom controls. You can zoom the project in and out by dragging the edges of the scroll box.
>
> Double-clicking the horizontal scroll bar will zoom the project out so that the entire length of the project will be displayed.

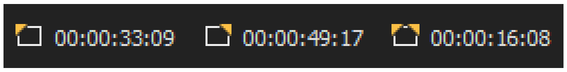
4 Time zoom control

Click + to zoom in horizontally, or click - to zoom out.

> **TIP** You can also click in the space between the + and - buttons and drag horizontally for adjusting zoom.

5 Length boxes

The length boxes display the start time, end time and length of a selected time range. If there’s no time selection, the first box shows the current cursor position.



00:00:33:09 00:00:49:17 00:00:16:08

Selection start	Selection end	Selection length

You can double-click the boxes and type a value to change the start, end or length of the current selection.

For more information, see [Creating selections and positioning the cursor]()

6 Transport and Editing toolbar

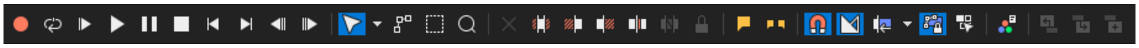
The editing toolbar is displayed below the timeline and provides access to tools you'll use while editing events on the timeline.

For more information, see [The Transport and Editing Toolbar]()

The Transport and Editing Toolbar

The Transport and Editing toolbar provides controls for playback, recording, and cursor-positioning buttons and timeline editing.

During project playback, audio tracks will be mixed to the Master bus unless you are using a custom bus assignment. Video tracks will be mixed to the Video Preview window.



For more information, see [Assigning tracks to busses]() and [Using the Video Preview window]()

> **TIP** You can choose EDIT | NAVIGATE and choose a command from the submenu to navigate the timeline quickly.

Button	Name	Description
●	Record	Starts recording on all armed tracks. If no tracks are armed, a new track will be created automatically. For more information, see [Recording audio](#)
⟲	Loop Playback	Plays only the events in the loop region in a continuous mode.
⏵	Play from Start	Starts playback from the beginning of the project regardless of the current cursor position. When you stop playback, the cursor returns to its original position.
▶	Play	Starts playback from the cursor position. **TIP** Select the MAKE SPACEBAR AND F12 PLAY/PAUSE INSTEAD OF PLAY/STOP button in the Video Preview window if you want the F12 and spacebar keyboard shortcuts to toggle between Play and Pause mode. In this mode, the cursor will maintain its position.
⏸	Pause	Pauses playback and leaves the cursor at its current position.
■	Stop	Stops playback or recording and returns the cursor to its starting position.
⏮	Go to Start	Moves the cursor to the beginning of the project.
⏭	Go to End	Moves the cursor to the end of the project.
⏴	Previous Frame	Moves the cursor to the previous frame. **TIP** Click and hold the PREVIOUS FRAME and NEXT FRAME buttons to move the cursor multiple frames.

Button	Name	Description
▶	Next Frame	Moves the cursor to the next frame.

Button	Name	Description
➤	Normal Edit Tool	Select this button to perform event editing. Click the down arrow ▾ and choose a tool from the menu to select the mode that will be used for editing events. For more information, see Editing Tool ● NORMAL EDIT TOOL: Use to trim the ends of events. For more information, see Adjusting an event's length ● SHUFFLE TOOL: Use to rearrange events on the timeline. For more information, see Shuffling events ● SLIP TOOL: Use to slip an event's media without moving the event on the timeline. For more information, see Slipping and sliding events ● SLIDE TOOL: Use to move an event on the timeline without moving the underlying media.

Button	Name	Description
		For more information, see Slipping and sliding events ● TIME STRETCH/COMPRESS TOOL: Use to make events longer or shorter while changing the velocity of the media to create fast- or slow-motion effects. For more information, see Adjusting an event's length ● SPLIT TRIM TOOL: Use to split an event at the point you click and trim the event in the direction you drag (eraser mode). For more information, see Slipping and sliding events
	Envelope Edit Tool	Select this button when you want to edit multiple envelopes without moving the events. For more information, see Editing Tool
	Selection Edit Tool	Select this button when you want to select multiple events. For more information, see Editing Tool

Button	Name	Description
🔍	Zoom Edit Tool	Magnifies the current project. For more information, see Editing Tool
✕	Delete	Deletes the selected events or tracks. For more information, see Deleting events
	Trim	Trims a time selection. For more information, see 318
	Trim Start	Trims the start of the selected event to the cursor. For more information, see Trimming events
	Trim End	Trims the end of the selected event to the cursor. For more information, see Trimming events
	Split	Click to split an event. For more information, see Splitting events

Button	Name	Description
	Smart Split	Click to Smart Split an event. For more information, see Smart Splitting Events
	Lock	Locks an event so that it cannot be moved or edited. For more information, see Applying switches to events
	Insert Marker	Adds a marker at the cursor position. For more information, see Inserting markers
	Insert Region	Adds region tags at each end of the selection. For more information, see Inserting regions
	Enable Snapping	Turns on snapping and enables the SNAP TO GRID and SNAP TO MARKERS commands. For more information, see Enable snapping
	Automatic Crossfades	Select this button to automatically create a crossfade when two or more events overlap. For more information, see Automatic crossfades

Button	Name	Description
	Auto Ripple	Select this button and choose a mode from the drop-down list to automatically ripple the contents of the timeline following an edit after adjusting an event's length, cutting, copying, pasting, or deleting events. For more information, see Post-edit ripple
	Lock Envelopes to Events	Select this button if you want envelope points to follow an event when it is moved along the timeline. For more information, see Video track automation
	Ignore Event Grouping	Select this button to override event groups without removing the groups. For more information, see Grouping events
	Color Grading	Select this button to show or hide the HDR-compatible Color Grading tools. For more information, see Color Grading
	Open Parent Timeline	Select this button to close the current nested timeline and open its parent timeline. For more information, see Nested Timelines
	Open Nested Timeline	Select this button to open the currently selected event as a nested timeline.

Button	Name	Description
⊞	Create Nested Timeline	Select this button to create and open a nested timeline from the currently selected timeline events.

Customizing the VEGAS Pro interface

You can customize the VEGAS® Pro interface to suit your needs and working preferences.

TIP

- If you prefer to work with the timeline at the bottom of the window and the docking area at the top of the window, select the DISPLAY TIMELINE AT BOTTOM OF MAIN WINDOW checkbox on the Display tab of the Preferences dialog. ℹ For more information, see Display Tab
- The track list, timeline, and window docking area sections can be sized to your preferences by dragging the dividers between them or by using F11:
    - F11 minimizes and restores the window docking area.
    - Shift+F11 minimizes and restores the track list.
    - Ctrl+F11 maximizes and restores the timeline vertically and horizontally (window docking area and track list will be hidden).

Hidden buttons

Several areas of the UI have been designed so that you can customize which buttons are displayed by default. Examples of this are the tool bars found in the **Video Preview window**, the **Trimmer window**, and the audio and video **Track Headers**.

Access to the buttons that are not currently displayed can be achieved via the More button ···. The More button also gives you access to the EDIT VISIBLE BUTTON SET command which enables you to control which buttons are displayed by default.

To access a button not currently displayed:

1. Click the More button ···
2. Click the command in the pop-up menu to perform the action of that button.

To choose which buttons are displayed by default:

1. Click on the More button ··· and choose EDIT VISIBLE BUTTON SET
2. Click the checkbox for any button you want to be displayed by default.

Customizing the toolbar

From the Options menu, choose CUSTOMIZE TOOLBAR or CUSTOMIZE TIMELINE TOOLBAR to add, remove, and rearrange buttons on the toolbar.

ℹ For more information, see Main toolbar or The Transport and Editing Toolbar

> **NOTE** To return the toolbar to its original configuration, click the RESET button.

Adding a button to the toolbar

1. From the Options menu, choose CUSTOMIZE TOOLBAR or CUSTOMIZE TIMELINE TOOLBAR. The Customize Toolbar dialog box appears.
2. From the CURRENT TOOLBAR BUTTONS list, select the button for which you want the new button to be added before. For example, if you are adding the TRIM button and want it to appear before the CUT button, select the CUT button.
3. From the AVAILABLE TOOLBAR BUTTONS list, select the button you want to add and click the ADD button. The new button is added to the toolbar.

> **NOTE** A separator may also be added between groups of buttons to separate them into logical groups. To add a separator, select SEPARATOR from the AVAILABLE TOOLBAR BUTTONS list and click the ADD button.

Removing a button from the toolbar

From the CURRENT TOOLBAR BUTTONS list, select the button you want to remove and click the REMOVE button (or double-click the button).

Rearranging buttons on the toolbar

From the CURRENT TOOLBAR BUTTONS list, select the button you want to move and click the MOVE UP or MOVE DOWN button.

Customizing keyboard shortcuts

From the Options menu, choose CUSTOMIZE KEYBOARD to customize the keyboard shortcuts available in the VEGAS Pro interface.

The KEYBOARD MAP box displays the currently assigned shortcut keys. Click a tab in the middle of the dialog to choose which shortcuts you want to see.

Editing or creating new shortcuts

1. Click a tab in the middle of the dialog to indicate the type of command you want to assign to a keyboard shortcut.
2. Select a command in the list.

> **TIP** You can type a word in the SHOW COMMANDS CONTAINING box to filter the list of commands to displayonly commands that contain the word you typed.

3. Click the SHORTCUT KEYS box and press the key combination you want to assign to the selected command.
4. Click the ADD button to assign the key combination in the SHORTCUT KEYS box to the selected command.

Saving a keyboard map

Click the SAVE AS button and type a name to save your current keyboard shortcuts to an .ini file in the C:\USERS\<USERNAME>\APPDATA\ROAMING\VEGAS\VEGAS PRO\23 folder.

> **NOTE** The AppData folder is not visible unless the SHOW HIDDEN FILES AND FOLDERS radio button is selected on the View tab of the Windows Folder Options control panel.

You can use this file as a backup or to share your keyboard shortcuts with other VEGAS Pro users.

Deleting a keyboard map

Choose a mapping from the KEYBOARD MAP drop-down list and click the DELETE button to remove the selected keyboard mapping.

> **NOTE** You cannot delete the default VEGAS Pro keyboard mapping.

Importing or renaming a keyboard map

Copy a VEGAS Pro keyboard mapping .ini file to the C:\USERS\<USERNAME>\APPDATA\ROAMING\VEGAS\VEGAS PRO\23 folder.

> **NOTE** The AppData folder is not visible unless the SHOW HIDDEN FILES AND FOLDERS radio button is selected on the View tab of the Windows Folder Options control panel.

The next time you start VEGAS Pro, the new keyboard mapping will be available from the KEYBOARD MAP drop-down list in the Customize Keyboard dialog.

> **TIP** If you want to edit a the name used to identify a keyboard mapping in the Customize Keyboard dialog, open the .ini file in a text editor and change the <DISPLAY NAME> portion of the Name=<Display Name> entry. Save the .ini file and restart VEGAS Pro to use the new name.

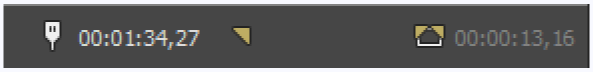
Resetting the default keyboard map

Choose [DEFAULT] from the KEYBOARD MAP drop-down list and click OK to restore the default configuration.

Time ruler

You can specify how the time ruler will be displayed (in time units).

> **TIP**
> To set the cursor position, click in the timeline or time ruler. The cursor moves to the position you click, and the cursor position is displayed below the timeline.



Changing the format of the ruler

To change the ruler time format:

- Select the Ruler tab in the Project Properties window. Choose a format from the RULER TIME FORMAT drop-down list. For more information, see [Setting project properties]
- From the Options menu, choose RULER FORMAT and choose a format from the submenu.

> **IMPORTANT** When synchronizing audio to video, it is crucial that the SMPTE timecode format used in the sequencer or digital audio workstation is the same as the SMPTE timecode striped onto the video. This guarantees that the SMPTE times on the video screen and computer monitor synchronize during playback.

Format	Description
Samples	Displays the ruler in samples.
Time	Displays the ruler in hours:minutes:seconds.milliseconds.
Seconds	Displays the ruler in seconds.
Time & Frames	Displays the ruler in hours:minutes:seconds.frames.
Absolute Frames	Displays the ruler with all frames numbered sequentially from the beginning of your project.
Measures and Beats	Displays the ruler in measures.beats.ticks, where 64 ticks = 1 beat. To set the tempo and number of beats per measure, use the Ruler tab in the Project Properties dialog. For more information, see Setting project properties
Feet and Frames 16mm (40 fpf)	Displays the ruler in feet+frames at a rate of 40 frames per foot.
Feet and Frames 35mm (16 fpf)	Displays the ruler in feet+frames at a rate of 16 frames per foot.
SMPTE Film Sync IVTC (23.976 fps)	Displays the ruler in hours:minutes:seconds:frames with a frame rate of 23.976 frames per second. This frame rate matches the frame rate used when the inverse telecine process removes pulldown from progressive-scan 24 fps (24p video). This format will display running film time correctly if you will be transferring your project to film. To see running project time, use SMPTE Film Sync (24 fps) or SMPTE Drop (29.97 fps).

Format	Description
SMPTE Film Sync (24 fps)	Displays the ruler in hours:minutes:seconds:frames with a frame rate of 24 frames per second. This frame rate matches the standard crystal-sync 16/33 mm film rate of 24 fps.
SMPTE EBU (25 fps, Video)	Displays the ruler in hours:minutes:seconds:frames with a frame rate of 25 frames per second. This is known as SMPTE EBU (European Broadcasting Union) because European television systems run at 25 fps. Use SMPTE 25 EBU format for PAL DV/D1 projects.
SMPTE Non-Drop (29.97 fps, Video)	Displays the ruler in hours:minutes:seconds:frames with a frame rate of 29.97 frames per second, which leads to a discrepancy between real ("wall clock") time and the SMPTE time, because there is no compensation in the counting system as there is in Drop Frame. Use SMPTE Non-Drop format for NTSC D1 projects that will be recorded on master tapes striped with Non-Drop timecode.
SMPTE Drop (29.97 fps, Video)	Displays the ruler in hours:minutes:seconds;frames with a frame rate of 29.97 fps to match the frame rate used by NTSC television systems (North America, Japan). Use SMPTE Drop Frame format for NTSC DV/D1 projects. Both SMPTE Drop and SMPTE Non-Drop run at 29.97 fps. In both formats, the actual frames are not discarded, but they are numbered differently. SMPTE Drop removes certain frame numbers the counting system to keep the SMPTE clock from drifting from real ("wall clock") time. The time is adjusted forward by two frames on every minute boundary except 0, 10, 20, 30, 40, and 50. For example, when SMPTE Drop time increments from 00:00:59.29, the next value will be 00:01:00.02.
SMPTE 30 (30 fps, Audio)	Displays the ruler in hours:minutes:seconds:frames with a frame rate of 30 frames per second. This rate is exactly 30 fps and is commonly used when synchronizing audio applications such as multitrack recorders or MIDI sequencers. This format should not be used when working with video.

Format	Description
Audio CD Time	Displays the ruler in hours:minutes:seconds:frames with a frame rate of 75 frames per second for creating Red Book CDs. For more information, see [Disc-at-once (DAO or Red Book) CD Burning]()
Set Time at Cursor	Allows you to set the current time at the cursor position.
Set Project Tempo	Allows you to set the tempo for the project.

Creating a time ruler offset

A time ruler offset changes the ruler so it starts at a specific time. Typically, this feature is used in conjunction with SMPTE and MIDI projects when their timelines are the main reference. An offset allows you to set the VEGAS Pro ruler based on another project's timeline for reference purposes.

> **NOTE** Since an audio CD must always begin at 00:00:00, you cannot create a time ruler offset when the time ruler is set to the Audio CD Time format.

1. Right-click the time ruler and choose SET TIME AT CURSOR from the shortcut menu. An edit box is displayed in the time ruler.

   > **TIP** To create a simple offset, click GO TO START ⏮ to move the cursor to the beginning of your project.

2. Type a time in the edit box and press Enter.

   The time ruler is shifted so the cursor position matches the time you specified. For example, if the cursor is positioned at the 2:00 minute mark and you enter 15:00 minutes, the start of the project will be set to 13:00 minutes.

Grid spacing

From the Options menu, choose GRID SPACING and choose a command from the submenu to specify the spacing of the vertical grid lines along the timeline.

You can use grid lines as snap points when SNAP TO GRID is enabled. ⓘ For more information, see [Enable snapping](#)

Saving and recalling window layouts

A window layout stores the sizes and positions of all windows and floating window docks in the VEGAS Pro workspace.

You can store any number of window layouts on your computer, and up to ten window layouts are available in the View menu (and via keyboard shortcuts) so you can quickly recall frequently used layouts. For example, you could have a layout dedicated to multitrack audio recording and another for ADR work.

> **IMPORTANT** Window layouts saved in VEGAS Pro 23 cannot be loaded in previous versions of VEGAS Pro.

Saving a window layout

1. Arrange the windows and docked windows as desired.

   ⓘ For more information, see [Using and Managing Docking Areas](#)

   > **TIP** Press Ctrl+Alt+D, release the keys, and then press a number on your keyboard (not the numeric keypad) to save the layout in that space.

2. From the View menu, choose WINDOW LAYOUTS, and then choose SAVE LAYOUT AS from the submenu. The Save Layout As dialog is displayed.

   Choose SAVE LAYOUT from the submenu if you want to update the current window layout. A bullet (●) is displayed next to the current layout.

3. In the NAME box, type the name you want to use to identify the layout. This name will be used in the Organize Layouts dialog.
4. Choose a setting from the SHORTCUT drop-down list to set the shortcut that will be used to load the layout.

   For example, if you choose 4, you could press Alt+D, release the keys, and then press 4 on your keyboard to load the layout.
5. The FOLDER box displays the path to the folder where the layout will be saved.

   Window layouts are saved in the `C:\Users\user name\AppData\Roaming\VEGAS Pro\23.0` folder.

   You can click the BROWSE button to choose a different folder.

   > **TIP** You can transfer layouts between computers by copying the `.VegasWindowLayout` files.
6. Click OK to save the new layout.

Loading a saved layout

From the VIEW menu, choose WINDOW LAYOUTS, and then choose the window layout you want to use from the submenu.

> **TIP** To load a layout quickly, press Alt+D, release the keys, and then press a number on your keyboard (not the numeric keypad) to recall the layout saved in that in that space. If no layout is saved in that space, nothing will happen when you press the shortcut.

If you've modified the current window layout, choose WINDOW LAYOUTS, and then choose RELOAD SELECTED LAYOUT from the submenu to reset the window layout to the last-saved version.

Adding a layout to the View | Window Layouts submenu

1. From the View menu, choose WINDOW LAYOUTS, and then choose ORGANIZE LAYOUTS from the submenu. The Organize Layouts dialog is displayed.
2. Select a layout in the AVAILABLE LAYOUTS IN CURRENT FOLDER box.

This box lists the `.VegasWindowLayout` files in the folder displayed in the CURRENT LAYOUT FOLDER box. If the layout you want to use is saved in a different folder, you can click the BROWSE button to choose a new folder.

3. Select a layout in the CURRENT LAYOUTS IN MENU box.
4. Click the ASSIGN (or REPLACE) button — or double-click a layout in the AVAILABLE LAYOUTS IN CURRENT FOLDER box — to add the layout to the View | Window Layouts submenu.

   You can click the MOVE UP or MOVE DOWN buttons to change the order of the layouts in the menu.
5. Click the ACTIVATE button — or double-click a layout in the CURRENT LAYOUTS IN MENU box — to apply the selected layout to the VEGAS Pro workspace.
6. Click OK to close the Organize Layouts dialog and apply your changes.

Removing a layout from the View | Window Layouts submenu

1. From the View menu, choose WINDOW LAYOUTS, and then choose ORGANIZE LAYOUTS from the submenu. The Organize Layouts dialog is displayed.
2. Select a layout in the CURRENT LAYOUTS IN MENU box.
3. Click the CLEAR button to remove the selected layout from the View | Window Layouts submenu.

   If you want to replace the selected layout, select a layout in the AVAILABLE LAYOUTS IN CURRENT FOLDER box and click the REPLACE button.
4. Click OK to close the Organize Layouts dialog and apply your changes.

> **NOTE** Removing a layout from the View | Window Layouts submenu does not remove the .VegasWindowLayout file from your computer.

Deleting a layout from your computer

1. From the View menu, choose WINDOW LAYOUTS, and then choose ORGANIZE LAYOUTS from the submenu. The Organize Layouts dialog is displayed.
2. Select a layout in the AVAILABLE LAYOUTS IN CURRENT FOLDER box.

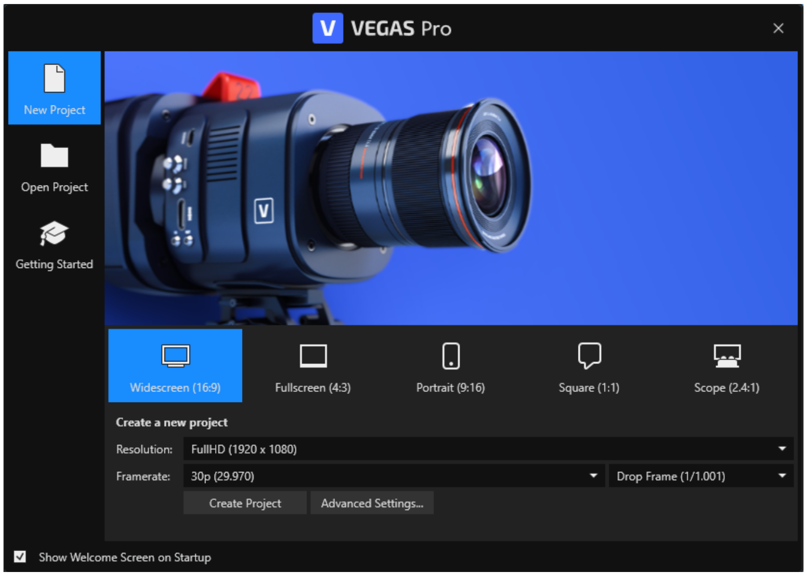
3. Click the DELETE LAYOUT button to remove the selected layout from your computer.

> **NOTE** You cannot delete a layout that is included in the CURRENT LAYOUTS IN MENU list. First, select the layout in the CURRENT LAYOUTS IN MENU list and click the CLEAR button. Next, select the layout in the AVAILABLE LAYOUTS IN CURRENT FOLDER list and click the DELETELAYOUT button.

4. Click OK to close the Organize Layouts dialog and apply your changes.

Welcome Screen

When you start VEGAS Pro for the first time, the Welcome screen is shown. Three tabs give you quick access to new-project setup, previous projects, and materials to help you use VEGAS more effectively.


VEGAS Pro
New Project
Open Project
Getting Started
Widescreen (16:9)
Fullscreen (4:3)
Portrait (9:16)
Square (1:1)
Scope (2.4:1)
Create a new project
Create Project
Advanced Settings...

Resolution: FullHD (1920 x 1080)

Framerate: 30p (29.970) Drop Frame (1/1.001)

☑ Show Welcome Screen on Startup

» If you’ve already closed it, choose FILE | WELCOME SCREEN to open it.

Create a New Project

The default tab, the NEW PROJECT tab, includes several options for the aspect ratio of the project you want to create.

1. Select the desired aspect ratio (e.g., Widescreen, Fullscreen).

   The default uses the typical HD project aspect ratio Widescreen (16:9).
2. Choose the resolution (e.g., FullHD 1920x1080) from the Resolution dropdown.
3. Select the frame rate (e.g., 30p) from the Frame Rate dropdown.
4. Click CREATE PROJECT to start with the selected settings.

Additional configurations

If you need more control over your new project's properties, click the ADVANCED SETTINGS button. This opens the full NEW PROJECT dialog box (and closes the Welcome screen) where you can specify all the fine details of your new project.

For more information, see Creating a new project

Open an Existing Project

In the OPEN PROJECT tab you see a list of your recent projects.

Open a recent project:

You can quickly access recent projects listed under OPEN A RECENT PROJECT.

» Click on the desired project from the list to open it.

Open existing project

If you don't see the project you want to open in the Recent Projects list.

1. Click the BROWSE button for an existing project file. This opens the Open dialog box.
2. Select the file and click OPEN.

Working with projects

A project (.veg) file saves the relevant information about your source media: file locations, edits, insertion points, transitions, and effects.

A project file is not a multimedia file. It contains references to the original source files, so you can edit your project non-destructively - you can be creative without worrying about corrupting your source files.

Creating a new project

The first step in creating your masterpiece is to create a VEGAS® Pro project file.

> **TIP** You can quickly create a project by clicking the NEW button 🗋 on the toolbar or pressing Ctrl+Shift+N. The project will use the default settings, but you can use the Project Properties dialog to edit the settings later. ℹ For more information, see Setting project properties

1. From the File menu, choose NEW. The New Project dialog is displayed.
2. Use the New Project dialog to set your project properties. For a detailed description of all the settings see below

   > **TIP** Set the START ALL NEW PROJECTS WITH THESE SETTINGS checkbox at the bottom of each tab to make the actual settings default.

3. Click OK to create the project.

Setting project properties

Use the Project Properties dialog to control the default settings and store information about the current project.

From the FILE menu, choose PROPERTIES to display the dialog.

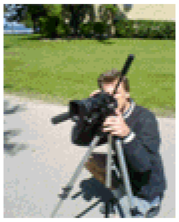
> **NOTE** Select the ☐ START ALL NEW PROJECTS WITH THESE SETTINGS checkbox to use the current settings whenever a new project is created.

Video

Use the Video tab to adjust the video format of your project. You can also click the PROJECT VIDEO PROPERTIES button ⚙ on the Video Preview window to display this tab.

Item	Description
Template	Allows you to select a preset template to automatically configure the controls in the dialog. You may also manually change the settings and save them as a custom template for future use. To create a new template, enter a name in the text box and click the SAVE TEMPLATE button 💾 . The new custom template name is added to the drop-down list. To set your project properties to match the properties of an existing media file, click the MATCH MEDIA SETTINGS button 📋 and browse to the file you want to use.
Width and Height	Determines the frame size of your final movie when rendered. The maximum frame size for AVI, MPEG, QuickTime, Windows Media, and still-image output is 2048x2048. **NOTE** The maximumframe size is 4096x4096.
Field order	Determines field order of the frames when drawn on the screen. Consult your capture/video output card's documentation for the proper field order for your specific device. ● NONE (PROGRESSIVE SCAN): Select this option when viewing the video on a computer. This option ignores interlacing. ● UPPER FIELD FIRST: Select this option (also called odd or field A) for video that will be viewed on a television. ● LOWER FIELD FIRST: Select this option (also called even or field B) for DV output or if UPPER FIELD FIRST produces jittery or shaky output.

Item	Description
Pixel aspect ratio	Choose a setting from the drop-down list to change the pixel aspect ratio of your project. This setting will depend on your capture/video output card. Computers display pixels as squares, or a ratio of 1.0. Televisions display pixels as rectangles (ratios other than 1.0). Using the incorrect setting can result in distortion or stretching. Consult your capture/video output card's manual for the proper settings.
HDR Mode	Selecting HDR10 or HLG in the drop-down menu will turn on all of the following settings: 1. Set Project Pixel format to "32-bit floating point (full range)" in Project Properties Dialog 2. Set appropriate View Transform ("Rec 2020 ST2084 1000 nits (ACES)" for HDR10 and "Rec 2020 HLG 1000 nits (ACES)" for HLG) in Project Properties Dialog 3. Enable "HDR Preview" in the PREFERENCES | PREVIEW DEVICE dialog and the "HDR Preview" toolbar button above preview window, if suitable hardware is available. This applies to both windowed and full-screen preview 4. Set the HDR COMPATIBLE OUTPUT filter in the RENDER AS... dialog. The presets will be filtered based on HDR mode. 5. Enable the MASTER DISPLAY Settings in Project Properties dialog. 6. Selecting OFF will reset all of the settings to default project settings.

Item	Description
Output rotation	Choose a setting from the drop-down list to rotate your project's output. Use output rotation to edit projects for display in portrait (rather than landscape) or inverted orientation: In this example, the video was shot with the camera tripod rotated 90 degrees. However, with the project output unrotated, the video is pillarboxed within the standard landscape frame.  After choosing 90 CLOCKWISE° from the OUTPUT ROTATION drop-down list, the Video Preview window is rotated, and the video fills the frame. **TIP** If you want to rotate a media file's orientation, you can use the ROTATION drop-down list on the Media Properties dialog. For more information, see Creating rotated projects

Item	Description
Frame rate	Choose a setting from the drop-down list to change the frame rate of your project. The television frame rate in the US, North and Central America, parts of South America, and Japan (NTSC) is 29.97 frames per second (fps). In many parts of the world, including Europe and much of Asia, the television standard is PAL at 25 fps. France, Russia, and most of Eastern Europe use SECAM, which is a variation on PAL and also uses 25 fps.

Item	Description
Pixel format	Choose a setting from the drop-down list to indicate whether you want to perform video processing (compositing, scaling, previewing, rendering, and most video plug-ins) using 8-bit or 32-bit, floating-point arithmetic. ● LEGACY 8-BIT (VIDEO LEVELS): Performs video processing using 8-bit arithmetic and in the video (studio RGB, or 16-235) color space. ● 8-BIT (FULL RANGE): Performs video processing using 8-bit arithmetic and in the full range (0-255) color space. In this pixel format mode, standard video formats in limited range are converted into full range RGB space by reading color range information provided in the media files. If the media file's color range is limited or undefined, then it is automatically converted full range RGB. If the color range is full, no level conversion is performed when decoding into RGB color space. This is the default pixel format for new projects. For more information, see 8-bit Pixel Format in Projects. ● 32-BIT FLOATING POINT (VIDEO LEVELS): Performs video processing using 32-bit arithmetic and in the video color space. ● 32-BIT FLOATING POINT (FULL RANGE): Performs video processing using 32-bit arithmetic and in the full-range color space. The 32-BIT FLOATING POINT settings allow greater precision for processing video, but require significantly more processing power than working with 8-bit video.

Item	Description
	TIP ● 32-bit floating point (video levels) is recommended when working with 10-bit YUV input/output or when using xvYCC/x.v.Color media. ● When using 8-bit input/output, the 32-BIT FLOATING POINT (VIDEO LEVELS) setting can prevent banding from compositing that contains fades, feathered edges, or gradients. ● Video plug-ins and media generators that support floating-point processing are included in the 32-BIT FLOATING POINT folder in the , , , , and windows. ● If you're creating a 32-bit project, you can increase performance during editing and playback by using the 8-BIT setting during editing and switching to 32-BIT FLOATING POINT (VIDEO LEVELS) before rendering. ● When working in 8-BIT (FULL RANGE) project mode, most of the reader plugins support the color range override option. To override the color range of a media file, right-click an event in the timeline and choose Properties from the context menu. In the PROPERTIES dialog, click the MEDIA tab. Choose the option you want from the Color Range drop-down list. Color range information will be persisted with projects.

Item	Description
Compositing gamma	When you choose 32-BIT FLOATING POINT (FULL RANGE) from the PIXEL FORMAT drop-down list, you can choose a compositing gamma value. - 1.000 (LINEAR): The default setting when you choose 32-BIT FLOATING POINT (FULL RANGE) from the PIXEL FORMAT drop-down list. - 2.222 (VIDEO): Processing in 8-bit video is always performed using a setting of 2.222.
ACES Version / ACES color space	Choose ACES version and Color space. For more information, see S-Log and ACES workflow
View transform	Choose the reference view transform to use for the project. For more information, see Enabling color management in your VEGAS Pro project
Look modification transform	Look modification transform (LMT) is helpful feature when working with 32 bit full range or in HDR project. LMT has two options: NONE - This is default option. APPLY BLUE LIGHT ARTIFACT FIX - Use this LMT for desaturating blue hues to reduce the artifact caused by bright blue colors (e.g. sirens, headlights, LED lighting, etc.) In 32 bit full range project or in HDR mode, you can choose "Apply Blue Light Artifact Fix", if the video preview shows any blue light artifact due to clipping caused by bright blue colors. In an 8 bit project or 32 bit Video level project or when view transform is off, LMT will be disabled.

Item	Description
Full-resolution rendering quality	Choose a setting from the drop-down list to set the quality of the rendered video. Unless you have specific performance problems, choose GOOD. Choosing BEST can dramatically increase rendering times. GOOD uses bilinear scaling without integration, while BEST uses bicubic scaling with integration. If you're using high-resolution stills (or video) that will be scaled down to the final output size, choosing BEST can prevent artifacts. **TIP** Some file formats allow you to associate a video rendering quality setting with a custom rendering template. Final rendering template settings override the FULL-RESOLUTION RENDERING QUALITY setting in the Project Properties dialog. For more information, see Custom rendering templates

Item	Description
Motion blur type	Choose a setting from the drop-down list to choose the curve that is used to blur frames when you add a motion blur envelope to the video bus track. For more information, see Video bus track Motion blurring creates the illusion of motion on individual frames (much like using a long exposure time) and can make computer-generated animation appear more smooth and natural. ● GAUSSIAN: Gives more weight to the central frame in the blur and less weight to the outer frames. A bell-shaped curve is used between the central and outer frames. Gaussian blur is the best choice in most situations where blurring is required. ● PYRAMID: Gives more weight to the central frame in the blur and the least weight to the outer frames. A linear slope is used between the central and outer frames. ● BOX: Uses an equal weighting for all frames, essentially averaging the frames in the blur. The GAUSSIAN (ASYMMETRIC), PYRAMID (ASYMMETRIC), and BOX (ASYMMETRIC) settings use only the left half of each curve, from the central frame back. Asymmetric settings create a hard leading edge with a trailing blur behind the moving object.

Item	Description
Deinterlace method	Choose a setting from this drop-down list to determine the method used to render effects and deinterlace the two fields that make up a frame. ● NONE: Performs no deinterlacing. ● BLEND FIELDS: Uses contents from both fields and works well for high-detail, low-motion video. ● INTERPOLATE: Uses a single field at a time and works well for high-motion, low-detail video. ● SMART ADAPTIVE (GPU ONLY): An advanced deinterlacing method that you can use when upscaling video for 4K/Ultra HD output. This setting is for use with interlaced clips up to 2048x1080. **TIP** No deinterlacing occurs in the DRAFT and PREVIEW video preview modes. The GOOD and BEST modes apply the selected deinterlacing method.

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Resample mode</td><td>
<p>Choose a setting from the drop-down list to determine how video frames will be resampled when the frame rate of a media file is lower than the project’s frame rate. This can occur either when the event has a velocity envelope or when the frame rate of the original media is different than the FRAME RATE setting on the Video tab of the Project Properties dialog.</p>
<p>With resampling, the intervening frames are interpolated from the source frames, much like a crossfade effect between the original frames. This may solve some interlacing problems and other jittery output problems.</p>
<p>You have three options to set the default resampling option as a project property:</p>
<table>
<tr><td>Frame blend</td><td>Analyzes the existing frames before and after the new one and blends them to create new frames as needed
NOTE The Frame blend option is the same resampling mode as the Force resampling option of previous versions.</td></tr>
<tr><td>Optical Flow</td><td>Uses optical flow technology to create new frames as needed</td></tr>
<tr><td>Disable resampling</td><td>Performs no resampling
NOTE New projects use Disable resampling by default</td></tr>
</table>
</td></tr>
</table>

Item	Description
	TIP You can override the project RESAMPLE MODE setting for each event using the event switches. For more information, see Applying switches to events
Adjust source media to better match project or render settings	Select this checkbox if you want VEGAS Pro to scale images or adjust interlacing to allow media files to work better with your project. This setting will correct for the following types of inconsistencies: ● DV media will be cropped for 320x240 Internet renders to prevent letterboxing. ● DV widescreen media will be cropped in HD projects. ● HD media will be cropped in DV widescreen projects. ● 486-line media will be cropped in 480-line projects. ● 480-line media will be padded in 486-line projects. When the checkbox is cleared, source media files are processed with their native settings.

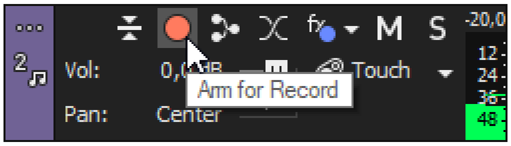
Item	Description
Prerendered files folder	Prerendered video files are saved to this folder so that you don't need to rerender the project every time you view it. For more information, see Selectively prerender video If you want to change the location of the folder, click the BROWSE button and choose a location. Ideally, this location should be on a different hard drive than the one where your operating system is installed. **IMPORTANT** Prerendered files can consume significant drive space. Select a folder on an a/v-capable drive with ample free space: DV requires approximately 228 MB per minute.
Free storage space in selected folder	Displays the total amount of available space on the selected drive.

Audio

Use the Audio tab to change the data format of the current project.

Item	Description
Master bus mode	Choose STEREO from the drop-down list to create a two-channel stereo project. Choose 5.1 SURROUND if you want to perform advanced 5.1-channel mixing. For more information, see 5.1 surround projects
Number of stereo busses	Enter the number of stereo busses for the project. For more information, see Adding audio busses
Sample rate	Choose a sample rate from the drop-down list or enter a value in the edit box.
Bit depth	Select a setting from the drop-down list to specify the number of bits used to store each sample. Higher values will increase the quality of playback and any recordings that you make.
Resample and stretch quality	Choose a setting from the drop-down list to determine the accuracy with which audio files will be resampled to match your project settings. The RESAMPLE AND STRETCH QUALITY setting also determines the quality of processing when time-stretching audio events. For more information, see Editing event properties

Item	Description
Enable low-pass filter on LFE	Select this checkbox if you want to apply a low-pass filter to each track in a 5.1 surround project that is assigned to the LFE channel. For more information, see 5.1 surround panning and mixing Applying a low-pass filter approximates the bass-management system in a 5.1 decoder and ensures that you're sending only low-frequency audio to the LFE channel. **IMPORTANT** Before rendering your surround project, check your surround authoring application's documentation to determine its required audio format. Some encoders require a specific cutoff frequency and rolloff, and your encoder may require that no filter be applied before encoding.
Cutoff frequency for low-pass filter	Choose a frequency from the drop-down list or type a frequency in the box to set the frequency above which audio will be ignored by the LFE channel.
Low-pass filter quality	Choose a setting from the drop-down list to determine the sharpness of filter's rolloff curve. BEST produces the sharpest curve.

Item	Description
Recorded files folder	When you record audio tracks, your recorded files are saved in a single folder. If you want to change the location of the folder, click the BROWSE button and choose a location. Ideally, this location should be on a different hard drive than the one where your operating system is installed. **TIP** If you have not specified a location, you will be prompted for the location where you want to save your recorded audio when you click the ARM FOR RECORD button in the track header:  2 Vol: 0,0 dB Touch Pan: Center M S -20,0 12 24 36 48 Arm for Record
Free storage space in selected folder	Displays the total amount of available space on the selected drive.

Ruler

Use the Ruler tab to change the format used to display the timeline ruler. VEGAS Pro also sends tempo information to tempo-aware audio plug-ins.

Item	Description
Ruler time format	Choose a setting from the drop-down list to choose how you want the Time Ruler to be displayed. You can change the format at any time after project creation. For more information about each time format, see Time ruler
Ruler start time	Enter the desired starting time for the project. For example, the ruler can be offset to start at 1 hour for timecode synchronization purposes.
Beats per minute	Enter your project tempo in Beats Per Minute. This tempo is used to determine the scale of the ruler (if you choose MEASURES & BEATS from the RULER TIME FORMAT drop-down list) and to specify the tempo used by the metronome. Select the IMPORT AT PROJECT TEMPO checkbox on the Audio tab of the Preferences dialog if you want ACID loops to be stretched to match the project tempo when you add them to the timeline or preview from the Explorer window. Clear the IMPORT AT PROJECT TEMPO checkbox if you want to ignore tempo information.
Beats per measure	Specify the number of beats in each measure. This tempo is used to determine the scale of the ruler (if you choose MEASURES & BEATS from the RULER TIME FORMAT drop-down list) and to specify the tempo used by the metronome.
Note that gets one beat	Specify the note that receives one beat. For example, if this value is four, then a quarter note gets one beat. This tempo is used to determine the scale of the ruler (if you choose MEASURES & BEATS from the RULER TIME FORMAT drop-down list) and to specify the tempo used by the metronome.

Summary

Item	Description
Title	Enter a title for the project.
Artist	Enter the name of the artist.
Engineer	Enter the name of the person who mixed or edited the project.
Copyright	Enter copyright information for the project.
Comments	Enter any comments you want to associate with the project.

Audio CD

Use the Audio CD tab to configure options for burning disc-at-once CDs. For more information, see Disc-at-once (DAO or Red Book) CD Burning

Item	Description
Universal Product Code/ Media Catalog Number	Universal Product Codes (UPC) or Media Catalog Numbers (MCN) can be written to a CD as a means of identification. However, not all CD-R drives support this feature. Check your CD-R drive documentation to determine if your drive will write these codes. Enter the code in this box, and the codes will be written to the CD along with the rest of the project. Universal product codes are administered by GS1 US: http://www.g-s1us.org/.
First track number on disc	Enter a number in the box or to specify the track number of the first track. **NOTE** Specifying a value other than one will produce a valid Red Book CD, but some audio CD players may be unable to play the disc.

Advanced

Item	Description
Master Display	Choose the characteristics of your master display device.
360 Output	Specify your project as a 360 project and activate 360 controls. For more information, see Preparing a project for 360° movies

8-bit Pixel Format in Projects

VEGAS Pro supports two modes for 8-bit projects:

8-bit (video level)

This mode is the same as the 8-bit mode in VEGAS Pro and previous versions. In this mode, VEGAS Pro decodes many common video formats like AVC, MPEG2, HEVC files to studio RGB levels (video levels) regardless of whether they are full range files or not, which could cause information to be lost in deep blacks and bright whites. This mode ignores the color range metadata information available in many files and does not perform any automatic level conversion when converting Y'CbCr format to RGB space. RGB video files and still images are decoded into full range RGB levels.

8-bit (full range)

In this project mode, standard video formats in limited range are converted into full range RGB space by reading color range information provided in the media files. If the media files color range is limited or undefined, then they are automatically converted full range RGB. If the color range is full, no level conversion is performed when decoding into RGB color space. Also note that, no level conversion is performed, when reading RGB format media or still images and media generators since their outputs are generally full range.

In this project mode, all the media in the timeline will be in full range and match the video preview behavior. This removes the need to apply a studio RGB to computer RGB effect in order to adjust the preview. It also eliminates the need to enable the ADJUST LEVELS FROM STUDIO RGB TO COMPUTER RGB option in external monitor preview settings. So, if the color range is “limited” or “Undefined” in Y’CbCr format, 16-236 and 16-255 color ranges will be converted to 0-255 RGB.

In VEGAS Pro, most of the reader plugins support the color range override option. To override the color range of a media file, right-click an event in the timeline and choose Properties from the context menu. In the PROPERTIES dialog, click the MEDIA tab. Choose the option you want from the Color Range drop-down list. Color range information will be persisted with projects.

> **NOTE** The color range override option is applicable only when you've set your project properties to full range mode. Currently color range override is not supported in some reader plug-ins like MVC and WMV, or in still-image readers.

Opening a project or media file

From the File menu, choose OPEN to open a media file or VEGAS Pro project.

> **NOTE**
> You can open multiple VEGAS Pro projects by launching another instance of the application (if your computer has enough resources).
>
> - Opening a project closes the current project and displays the opened project in the VEGAS Pro window.
> - Opening a media file will place the event that contains the media onto a new track in the current project.

Opening a VEGAS Pro project

1. From the File menu, choose OPEN. The Open dialog box is displayed.
2. Choose the folder where the project you want to open is stored:
   - Choose a drive and folder from the LOOK IN drop-down list.
   - Choose a folder from the RECENT drop-down list to quickly select a folder from which you have previously opened files.
3. Select a file in the browse window or type a name in the FILE NAME box. Detailed information about the selected file appears at the bottom of the dialog box.

   > **TIP**
   >
   > - To limit the files displayed in the dialog, choose a file type from the FILES OF TYPE drop-down list or enter *. and an extension in the FILE NAME box. For example, enter *.wav to display all wave files in the current folder, or enter *guitar*.wav to display all wave files that have the word guitar in the file name.
   > - To open a project quickly, double-click a .veg file in the Explorer window.

4. Click OPEN. If you have not saved the current project, you will be prompted to save your changes.

Nesting Projects

Nesting allows you to add a VEGAS Pro project to the timeline of another project. Nesting can help you organize a timeline or create other effects. For more information, see [Nesting projects]()

> **TIP** Use nested projects to organize a project that uses extensive compositing.

Perform either of the following actions to nest a VEGAS Pro project within the current project:

- Drag a VEGAS Pro project from the Explorer window (or Windows Explorer) to the timeline.
- From the File menu, choose IMPORT, then choose MEDIA from the submenu, and then browse to the project you want to use.

The file is added to the Project Media window and an event is created where you drop the project in the timeline or at the cursor position before you opened the Import Media dialog.

Opening a media file

1. From the File menu, choose OPEN. The Open dialog box is displayed.
2. Choose the folder where the file you want to open is stored:
   - Choose a drive and folder from the LOOK IN drop-down list.
   - Choose a folder from the RECENT drop-down list to quickly select a folder from which you have previously opened files.
3. Select a file in the browse window or type a name in the FILE NAME box. Detailed information about the selected file appears at the bottom of the dialog box.

> **TIP** To limit the files displayed in the dialog, choose a file type from the FILES OF TYPE drop-down list or enter *. and an extension in the FILE NAME box. For example, enter *.wav to display all wave files in the current folder, or enter *guitar*.wav to display all wave files that have the word guitar in the file name.

> **NOTE** If you want to use RAW camera files in your project, the Microsoft Camera Codec Pack will allow you to view RAW camera files and add them to the timeline.

4. Click OPEN.
5. The file is added to the Project Media window and an event is created. The event is created at the cursor position in the selected track, or a new track will be created if no tracks of the appropriate type exist. For example, if your current project contains three audio tracks when you open an AVI file, a video track will be created for the AVI.

Opening a still-image sequence

If you've exported a video clip as a still-image sequence using another application (a 3D-rendering application, for example), you can add the sequence to the VEGAS Pro timeline as a single event.

1. From the File menu, choose OPEN. The Open dialog box is displayed.
2. Choose the folder where the sequence you want to open is stored:
    - Choose a drive and folder from the LOOK INdrop-down list.
    - Choose a folder from the RECENT drop-down list to quickly select a folder from which you have previously opened files.
3. Select the first image in the sequence (or the image you want to use to start the event). Detailed information about the selected file appears at the bottom of the dialog box.
4. Select the OPEN SEQUENCE check box.

5. In the LAST IMAGE box, type the number of the last image you want to open. For example, if you'd selected AnimationOne_00001.tga in step 3, you could type 120 in this box to create a new event using AnimationOne_00001.tga to AnimationOne_00120.tga.
6. Click OPEN to display the Media Properties dialog, where you can view or edit information about the sequence. For more information, see Viewing or changing media file properties
7. Click OK. A new event is created at the cursor position in the selected track (a new track will be added if no track is selected). Each image in the sequence will be displayed for one frame.

Opening a CD Architect version 4 project

If you have existing CD Architect version 4 projects, you can use VEGAS Pro to open your project files and create Red Book CDs.

1. From the File menu, choose OPEN. The Open dialog box is displayed.
2. Choose the folder where your CD Architect project file (.cdp) is stored:
   - Choose a drive and folder from the LOOK IN drop-down list.
   - Choose a folder from the RECENT drop-down list to quickly select a folder from which you have previously opened files.
3. Select a project file in the browse window or type a name in the FILE NAME box.
4. Click OPEN. If you have not saved the current project, you will be prompted to save your changes.

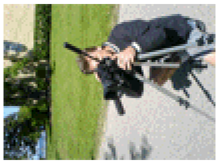
   For more information about creating Red Book CDs, see Disc-at-once (DAO or Red Book) CD Burning

Creating rotated projects

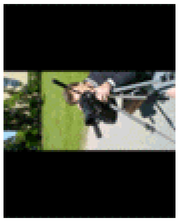
The use of rotated displays — monitors that display vertical media — has become increasingly popular: you can see them in kiosks, presentations, and even on the nightly news. If you have a project that you'd like to display in a rotated format, VEGAS Pro makes it easy.

1. Create a new project.
2. Set your project properties as needed, and then choose a setting from the OUTPUT ROTATION drop-down list to indicate the orientation of your destination display device. If you want to display your project in portrait (tall) mode, choose 90° CLOCKWISE or 90° COUNTERCLOCKWISE.

   For more information, see Setting project properties

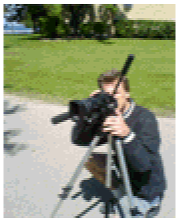
   

   In this example, the video was shot with the camera tripod rotated 90 degrees. However, because neither the project or the media has been rotated, the video is displayed sideways within the standard landscape frame.

   After choosing 90° CLOCKWISE from the OUTPUT ROTATION drop-down list, the Video Preview window is rotated. Because the media hasn't been rotated yet, it doesn't match the project orientation and is letterboxed within the frame.
3. Add your media files to your project.

   For more information, see Adding media files to your project
4. Edit the properties for each of your media files to set its rotation as needed:
   a. Right-click a media file in the Project Media window and choose PROPERTIES from the shortcut menu. The Media Properties dialog is displayed.
   b. Choose a setting from the ROTATION drop-down list to indicate the direction you want to rotate your media.



After choosing 90° CLOCKWISE from the ROTATION drop-down list, the media is rotated, and the video fills the frame.

c. Click OK to close the Media Properties dialog and save your changes.

> **TIP** To rotate multiple files quickly, select them in the Project Media window, right-click a selected file, and then choose ROTATE 90° CLOCKWISE or ROTATE 90° COUNTERCLOCKWISE from the shortcut menu.

5. Drag your clips from the Project Media window to the timeline to create events.

6. Edit your project as needed.

   For more information, see Editing events on the timeline

7. Render your project to any supported rendering format.

   In the Render As dialog, click the RENDER OPTIONS button and select the USE PROJECT OUTPUT ROTATION SETTING checkbox if you want to use the OUTPUT ROTATION setting from the Project Properties dialog for your rendered file. When the checkbox is cleared, the media is rotated according to its Media Properties setting, but the project itself is unrotated—you can use this setting to proof your project on an unrotated display.

   For more information, see Rendering your project

> **TIP** To render a portrait-oriented file for viewing on a computer without a rotated display, you can create a rendering template that matches the proportions of your project. For more information, see Custom rendering templates

a. Right-click the Video Preview window and ensure SIMULATE DEVICE ASPECT RATIO is selected.
b. Next, adjust the size of the Video Preview window to match the frame size you'd like to render and note the DISPLAY dimensions in the lower-right corner of the Video Preview window.
c. From the File menu, choose RENDER AS, choose the desired rendering format from the FORMATS box list, and then choose a rendering template that's close to the frame size you noted in step b. Windows Media Video is a good choice.
d. Click the CUSTOM button, and then use the Video tab in the Custom Template dialog to adjust the frame size to match the dimensions you noted in step 7b.
e. Save your template for later use.
f. Clear the USE PROJECT OUTPUT ROTATION SETTING checkbox and render your file.

Nesting projects

Nesting allows you to add a VEGAS Pro project to the timeline of another project. Nesting can help you organize a timeline or create other effects:

- Create a single element — such as a lower-third graphic or watermark — that you can use in multiple timeline locations or projects.
- Create a complex composited element that you can use as a single media object in the timeline. ⓘ For more information, see Compositing video
- Create a transition across multiple events by placing the events in a nested project and applying a transition to the nested project event.
- Create a musical composition with its own tempo and FX bus structure that you can use in another project.
- Create a separate project for each scene in a video and nest those projects in a master video project. You can apply color correction to each shot within the scene and then apply color correction to the entire scene in the master project.

- Use master projects to deliver a single project in multiple formats without time- and disk-consuming intermediate renders: for example, you could add your 24p, 16:9 HD (high-definition) project to a master project to reformat the project as widescreen SD (standard definition) for DVD, letterboxed SD for VHS, 4:3 pan-and-scan SD, or 25p.

Perform either of the following actions to nest a VEGAS Pro project within the current project:

- Drag a VEGAS Pro project from the Explorer window (or Windows Explorer) to the timeline.
- From the File menu, choose IMPORT, then choose MEDIA from the submenu, and then browse to the project you want to use.

The file is added to the Project Media window and an event is created where you drop the project in the timeline (or at the cursor position if import or use the Explorer to open a project file).

You can edit the nested project's events just like any other event on the timeline: trim, shuffle, stretch, crop, or apply event switches.

For more information, see Editing events on the timeline

NOTE

- The output from the nested project's master bus is used to create the audio event. If you nest a 5.1 surround project, the audio event will be a stereo downmix of the surround master bus. For more information, see [5.1 surround projects]
- Audio events from nested projects cannot be edited in a sound editor. For more information, see [Opening events in an audio editor]
- The audio from a nested project will require that a proxy file be built. To avoid building proxy files, delete audio from nested projects and use the master project to create your audio.

  From the Tools menu, choose REBUILD OFFLINE NESTED AUDIO to rerender any offline audio proxy files in your project. Audio proxy files can be offline if you cancel rendering when adding a nested project.
- Markers and regions in the nested project are displayed in the timeline as media markers in the event. For more information, see [Using media markers and regions]
- Prerendered video from a project will be used when that project is nested in another project's timeline.
- You can edit a nested project by right-clicking the event in the timeline and choosing EDIT SOURCE PROJECT from the shortcut menu. A new VEGAS Pro window will open to allow you to edit the project. For more information, see [Project references in rendered files]

Nested Timelines

You may have a section of a timeline edited and then decide that you'd like that section to be treated as just one event (or, more precisely, one audio and one video event that are grouped together) rather than multiple components. Then you can create a NESTED TIMELINE.

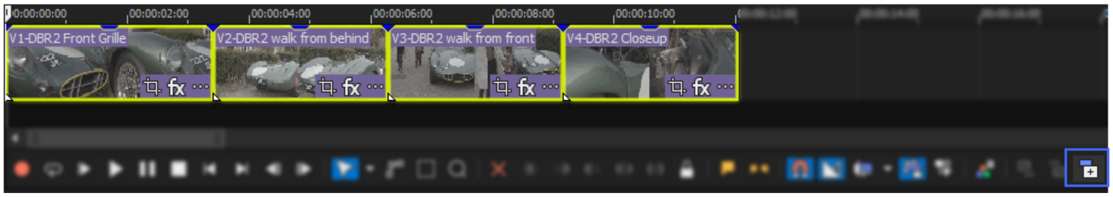
Nested Timelines leverage the existing nested projects capabilities. Nested timelines are technically just nested projects, but with a big improvement: To edit it, you don't have to open it in a separate instance of VEGAS Pro, you can switch back and forth between the nested project and the parent project all in one instance.

When you create a nested timeline, you are actually creating another project. That project can be treated as a nest, or worked on individually and the parent project updates automatically.

To create a new nested timeline:

---

1. Select one or more sequential events from one or more tracks and click the CREATE NESTED TIMELINE button from the Transport and Editing toolbar.

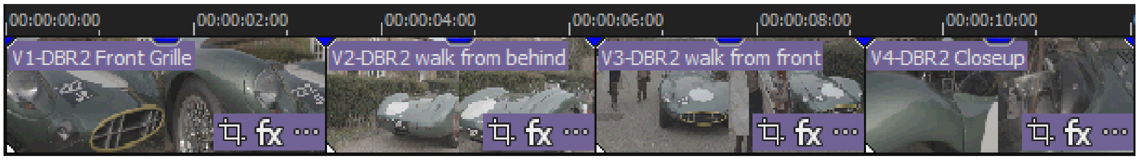

00:00:00:00
00:00:02:00
00:00:04:00
00:00:06:00
00:00:08:00
00:00:10:00
V1-DBR2 Front Grille
V2-DBR2 walk from behind
V3-DBR2 walk from front
V4-DBR2 Closeup
fx

> **NOTE** If haven't already saved your (parent) project, you will be prompted to save it now.

2. You will be prompted to save the nested timeline, too.

> **NOTE** Note that the proposed name is the name of the parent project + underscore + "Untitled Timeline" rather than "Untitled" for easy identification.

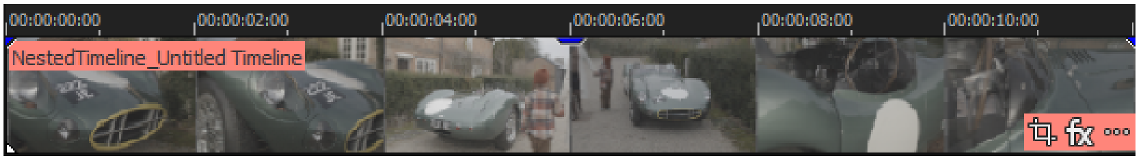
3. Creating the nested timeline navigates you into the new timeline that contains the previously selected events only.


00:00:00:00
00:00:02:00
00:00:04:00
00:00:06:00
00:00:08:00
00:00:10:00
V1-DBR2 Front Grille
V2-DBR2 walk from behind
V3-DBR2 walk from front
V4-DBR2 Closeup
fx

4. You could do further editing in this timeline now, it will behave exactly like the parent timeline. But since the very purpose of the action was to use the arrangement of these events as a whole, you will want to return to the parent project now.

   To navigate back to a nested timeline's parent timeline, click the OPEN PARENT TIMELINE button from the Transport and Editing toolbar.

5. Back in the parent timeline, the nested timeline will appear on the parent timeline as a grouped audio and video event pair that replace the original events that were used to create the nested timeline.

   The nested timeline event length will initially be of the length of the nested timeline when it was created.

6. The nested timeline is an event like any other event in the timeline and can be edited, moved, duplicated and so on.

7. To open the nested timeline again to change something *inside* the nested timeline click the OPEN NESTED TIMELINE button from the Transport and Editing toolbar (or choose the command from the nested timeline event's context menu).

Opening a recent project

A list of recently used project files is maintained at the bottom of the File menu. Choosing a project from this list allows you to quickly return to work on that project.

You can use the General tab in the Preferences dialog to turn the recently used file list on or off and to specify how many files should be displayed. For more information, see General Tab

Saving a project

From the File menu, choose SAVE to save changes to the current VEGAS Pro project (.veg). When a VEGAS Pro project is saved, all of the layout of tracks, envelope adjustments, effects parameters, etc. are saved in this project file.

The first time you save a project, the Save As dialog is displayed.

> **NOTE** If you want to keep the previous version of your project before you made changes, use the SAVE AS command to save the new version of the project with a new name. For more information, see Saving and renaming a project (Save As)

Saving a new version of the project (Incremental Save)

To keep older work states of your project, you normally use the SAVE AS function. You save your current project under a new project file name (e.g. <project name>_001) and continue to work with this project. The old work state remains available in the original project.

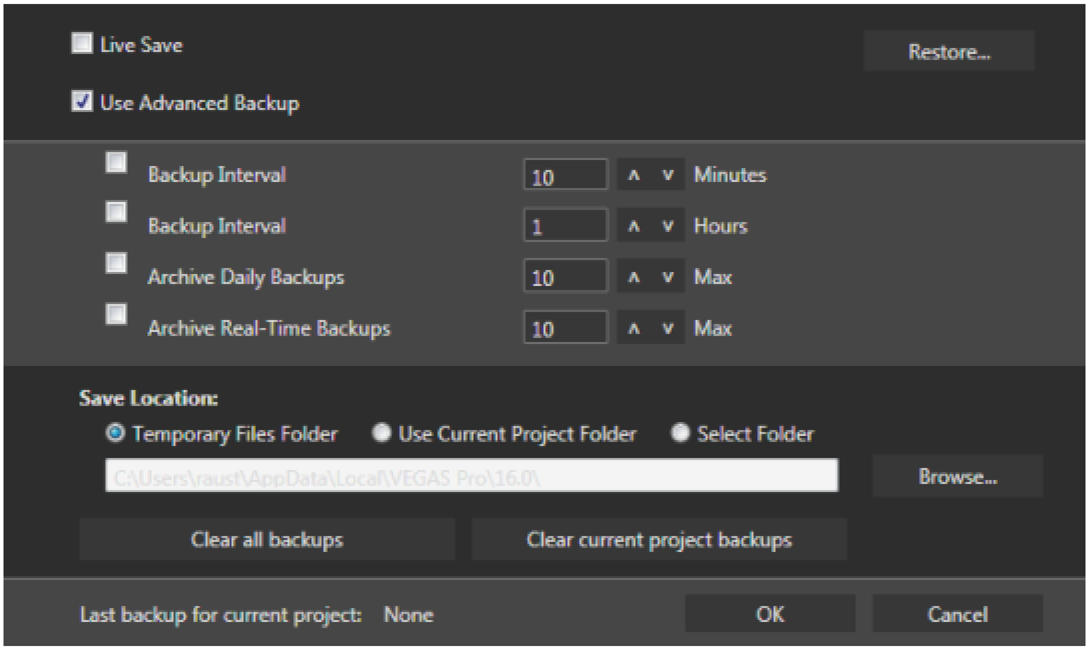
The File menu | INCREMENTAL SAVE command automates this process so that you do not have to set a name for the new file version each time. Save your project once under the desired project name (e.g. "myproject..veg"). If you now call the INCREMENTAL SAVE function, the current project is saved under the name myproject_0001, next time as myproject_0002 and so on. The appended number is incremented, so this function is also called Incremental Save.

> **TIP** The default keyboard shortcut for Incremental Save is Ctrl+ Alt + S. There is also a toolbar button available, but it is not visible by default. You can add it by customizing your toolbar.

Advanced Save - Live Save & Automatic Backups

The advanced auto save feature allows you to have flexibility for saving and backing up your projects.

» Choose TOOLS | ADVANCED SAVE to open the VEGAS ADVANCED SAVE UTILITY dialog.


☐ Live Save
☑ Use Advanced Backup

☐ Backup Interval 10 Minutes
☐ Backup Interval 1 Hours
☐ Archive Daily Backups 10 Max
☐ Archive Real-Time Backups 10 Max

Save Location:
● Temporary Files Folder ○ Use Current Project Folder ○ Select Folder
C:\Users\raust\AppData\Local\VEGAS Pro\16.0\

Last backup for current project: None

Live Save

The Live Save function protects you in the event of an unexpected shutdown of the application and ensures that you will not lose any work beyond the specific edit you were working on at the time of the shutdown. It is disabled by default.

> **NOTE**
> If LIVE SAVE is enabled, you will be unable to use the REAL-TIME BACKUPS feature.
>
> A project must be saved once before the LIVE SAVE will start to work!
>
> After saving the project initially, LIVE SAVE will automatically save any changes you make to the project without requiring any interaction from you. The project title will not display an asterisk (*) indicating unsaved changes.
>
> If you prefer to manually save your edits, you can disable LIVE SAVE.

Creating timed project backups

Checking USE ADVANCED BACKUP will give you a number of options for automatically backing up your project.

> **NOTE** The creation of automatic backups begins when a change is made to the project.

- If USE ADVANCED BACKUP is off, VEGAS Pro will use the LEGACY AUTOSAVE FUNCTION:

  Legacy autosave function:

  A backup copy of your project is automatically saved every five minutes. If your system crashes, you will be prompted to open the backup file the next time you start the application.

  Backup files are saved in the location specified in the TEMPORARY FILES FOLDER box on the General tab of the Preferences dialog. Files are saved with the .autosave.veg extension and are deleted when you exit the application. For more information, see General Tab

  If you prefer not to autosave your project, you can clear the ENABLE AUTOSAVE checkbox on box on the General tab of the Preferences dialog.

  > **TIP** When you save a project,.veg.bak files are created in your project folder to allow you to return to the project's last-saved state. Creation of backup files is independent of automatic project saving.

- BACKUP INTERVAL (MINUTES): This saves a backup every time the specified time has elapsed if the project has been edited. Backups with this option are only stored within the last hour. Any older backups will be deleted. That means, when you keep the default time of 10 minutes, the last 6 backup files are held, when you reduce the time span to 6 minutes, you'll end up with 10 backup files.
- BACKUP INTERVAL (HOURS): This will create a backup after the specified number of hours if the project has been edited. Backups created with this option are only stored within the last 10 hours. Any older backups will be deleted.

- ARCHIVE DAILY BACKUPS: This option will create a backup once a day or upon the close of the application. You can set how many of these backups are stored on the computer (up to 500). The oldest backup is deleted when the limit is reached.

  > **NOTE** Note that these three options can all be combined: The idea is that you keep some (minor) backups for the most recent changes (in the last hour), but also at least one (major) backup for every hour later and, if required, a backup a day.

- ARCHIVE REAL-TIME BACKUPS: Activate this option to create a backup for each edit. You can set how many of these backups are stored on the computer (up to 500). The oldest backup is deleted when the limit is reached.

  > **NOTE** When REALTIME BACKUPS are enabled, the minutely, hourly and daily backups are not available.

  > **IMPORTANT** Realtime backups will remarkably slow down your computer's performance!

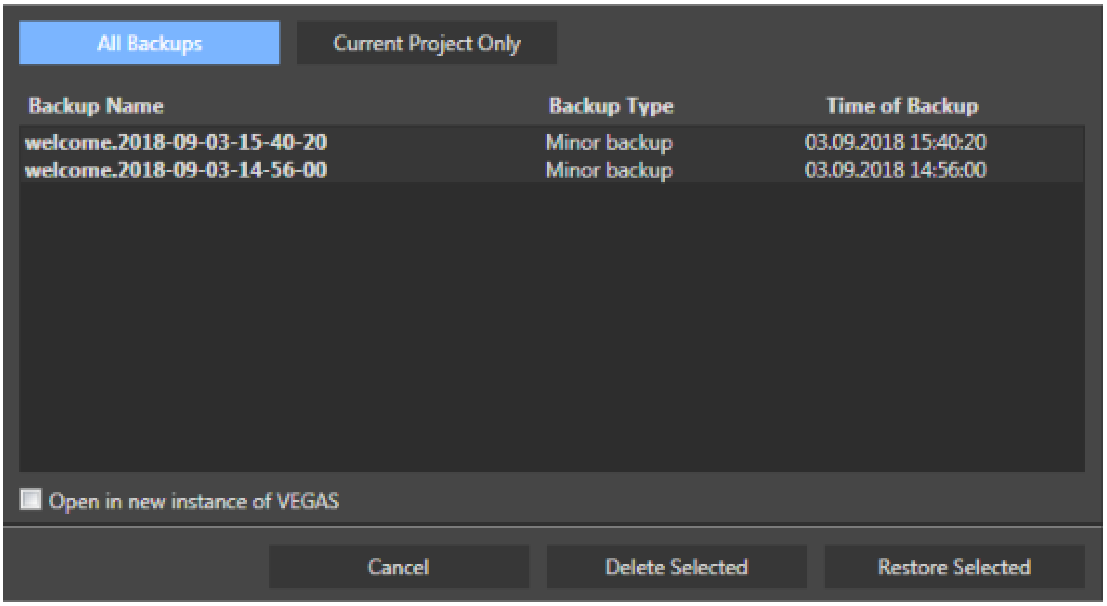
You can set the location for the backups under SAVE LOCATION (This does not apply to LIVE SAVE.)

- TEMPORARY FILES FOLDER will store the files in the temporary files location that is set in preferences.
- USE CURRENT PROJECT FOLDER will store the files where the current project has been saved at.
- SELECT FOLDER will allow you to select a specific location where the backup files will be stored (using the BROWSE... button and edit box)

> **NOTE** The four different backup types: minutely, hourly, daily and real-time are stored in separate sub-folders in this location

Restoring backups

To restore a backup, press the RESTORE button. This will open the RESTORE BACKUP dialog window which contains a list of the backups on the system.



Backup Name	Backup Type	Time of Backup
welcome.2018-09-03-15-40-20	Minor backup	03.09.2018 15:40:20
welcome.2018-09-03-14-56-00	Minor backup	03.09.2018 14:56:00

☐ Open in new instance of VEGAS

To filter the list to show only the backups for the current project that you are working in, press CURRENT PROJECT ONLY.

To restore a backup, select it from the list and press RESTORE SELECTED.

The current project is closed and the backup project is opened in the current instance of VEGAS Pro. If you want to open the backup project in a new instance of VEGAS Pro check OPEN IN NEW INSTANCE OF VEGAS.

To delete a single backup file, select it and press DELETE SELECTED.

Deleting backups

To delete all backups, press CLEAR ALL BACKUPS.

To delete only the backups from the current project, press CLEAR CURRENT PROJECT BACKUPS.

To delete a specific backup, you have to go to the RESTORE BACKUPS dialog window (look above)

Saving and renaming a project (Save As)

From the File menu, choose SAVE AS to save the current project to a different location or with a new name.

1. From the File menu, choose SAVE AS.
2. Select the drive and folder where you want to store the project.
3. Type a name in the FILE NAME box.
4. Select the COPY MEDIA WITH PROJECT checkbox if you want to create copies of each of the project's media files in the same location as the project file. This allows you to collect all of a project's assets in a single location.
5. Click the SAVE button.
6. If you selected the COPY MEDIA WITH PROJECT check box, a dialog is displayed to allow you to specify how you want to copy media files:
    - Select the COPY SOURCE MEDIA radio button to copy the entire source media files to your project folder.

      Any project media files from folders outside the project folder are copied to the project folder. Media files that are saved in folders below the project folder are not copied.
    - Select the CREATE TRIMMED COPIES OF SOURCE MEDIA radio button and enter a value in the EXTRA HEAD AND TAIL box to reduce the number and size of media files necessary to represent your project.

      Your project will be scanned to determine how much of each media file is being used and those regions will be rendered to new media files. The amount of time specified in the EXTRA HEAD AND TAIL setting will be added before and after the media file to allow subsequent edits. All events are then updated to point to the new files. Finally, inactive takes are removed from the project, and the project is saved.

> **NOTE**
>
> The newly rendered files will match the source files' properties as closely as possible:
>
> - Audio/video events are saved in a new AVI file. You can trim DV AVI, uncompressed AVI, and YUV AVI files. Because of the lossy nature of other video formats, those video files will not be trimmed, but will simply be copied to the project folder.
> - Audio-only events will be rendered to the Wave format if under 2 GB (or Wave64 if over 2 GB), and DV files will be rendered as DV AVI files.

Project references in rendered files

When your VEGAS Pro project uses media that was rendered with an embedded project path reference, you can easily open the source project in the associated application if you need to edit the media later. ACID 5.0, Sound Forge 8.0, and VEGAS Pro 6.0 and later allow you to save the project path reference when you render files.

For example, imagine that you have an audio file on the VEGAS Pro timeline that was rendered from an ACID project. In previewing your VEGAS Pro project, you discover that you'd accidentally rendered your ACID project with a critical track muted. You could simply right-click the event on the VEGAS Pro timeline and choose EDIT SOURCE PROJECT from the shortcut menu to reopen your ACID project, unmute the track, and then rerender it.

> **NOTE** The project information in the rendered file is a reference to a project file only. If you modify the project file after rendering, the project data will no longer match the rendered file. To edit a project using a path reference, the project file and all media must be available on your computer.

Saving the project path in the rendered file

1. Save your VEGAS Pro project. The project must be saved before you can embed the project reference in the rendered file.

2. Perform the procedure described in the Rendering Projects topic to choose the file type and location for rendering your files, and select the SAVE PROJECT AS PATH REFERENCE IN RENDERED MEDIA check box.

   For more information, see Rendering your project

   > **NOTE** The checkbox will be unavailable if you haven't saved your project or if you're rendering using a third-party file-format plug-in.

Editing a referenced project

1. Perform one of the following actions:
   - Right-click a media file in the Explorer window.
   - Right-click a media file in the Project Media window.
   - Right-click an event on the timeline.
2. From the shortcut menu, choose EDIT SOURCE PROJECT. An ACID, VEGAS Pro, or SOUND FORGE window will open with the source project.

   > **NOTE** To edit a source project using a computer other than the computer where the project was created, the editing computer must meet the following requirements:

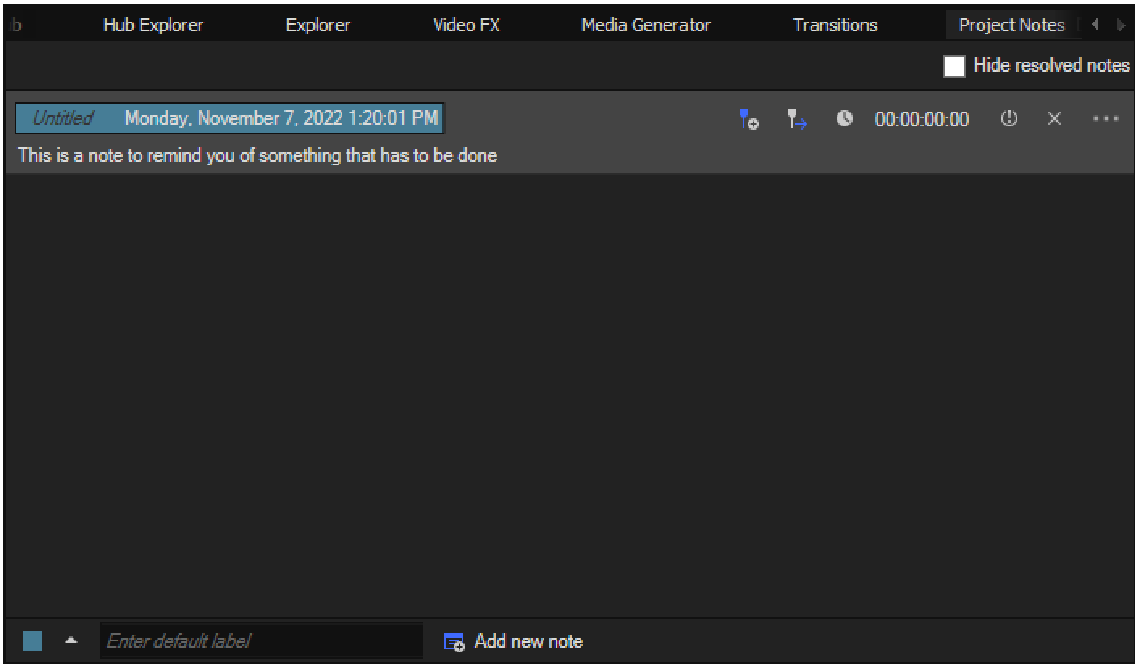
   - The software that was used to create the project must be installed and the project file extension (.acd, .acd-zip, .veg, .vf, or .frg) must be registered on the editing computer.
   - The editing computer must have the same version (or later) of the software that was used to create the project.
   - The project file must exist on the editing computer using the same file path as on the computer where the project was created.
   - The project's source media must exist on the editing computer. If the media files do not use the same file path as on the computer where the project was created, you will be prompted to choose a new folder or replacement files.

3. Edit the project as necessary.
4. Render the edited project using the same name as the original media file and close the editing application.

   If you're editing an existing track, your project will automatically be updated to use the latest rendered media file.

Creating Project Notes

Project Notes allow VEGAS Pro editors to leave themselves notes in a project or to collaborate on a project and leave notes for each other along the way.



Untitled Monday, November 7, 2022 1:20:01 PM 00:00:00:00

This is a note to remind you of something that has to be done

Enter default label

Each note has a specific timeline timecode, so you can use them to leave comments in exact points in your project. You, can categorize them by colors and custom labels, and the system can keep track of which notes have been addressed and which still need attention.

To use Project Notes, click the PROJECT NOTES tab if necessary to make the window visible.

Default Color	■	Click the Note Default Color button and choose the color from the list that you would like all of your new notes to take on.
Default label		Click inside the Enter default label text field and type any label you would like all new notes to take on.
Add new note		Click the Add New Note button to create a note with these default settings. This note contains the timecode that corresponds to your current cursor location in the timeline.
Update Timecode to Timeline Cursor		To change the timecode, click in the timeline to place your cursor at the new location and click the Update Timecode to Timeline Cursor button.
Jump to Timecode		To instantly move your timeline cursor to the location of any note, click the note's Jump to Timecode button.
Select Current Timecode	🕓	To manually edit a note's timecode, select the note's current timecode value and type the new timecode into the text box, then press the Enter key.
Resolve note / Unresolve Note	ⓘ ✓	Click the Resolve Note button to indicate that you have addressed the issue mentioned in the note. Click the button again (notice its name has changed to Unresolve Note) to return the note to an unresolved state.
Hide resolved notes		Select the Hide resolved notes checkbox to limit your note view to just the unresolved notes in your list. Deselect the checkbox to show all notes whether resolved or not.
Delete Note	×	Click the Delete Note button to delete a note from the Project Notes window.
More button	⋯	Click a note's More button. In the menu you can select a new color for this note from the list or select the note's current label so you can type a new label.

VIDEO *Project Notes*

Importing and exporting projects

Project-interchange tools add flexibility to your workflow, allowing you to exchange projects with other popular editing platforms.

Importing a project

1. From the File menu, choose IMPORT, and then choose a project type from the submenu:
   - PREMIERE/AFTER EFFECTS (*.PPROJ): imports an Adobe Premiere or After Effects project.
   - FINAL CUT PRO 7/DAVINCI RESOLVE (*.XML): imports an XML file from Apple Final Cut Pro 7 or DaVinci Resolve.
   - FINAL CUT PRO X (*.FCPXML): imports an XML file from Apple Final Cut Pro X.
   - EDL TEXT FILE (*.TXT): imports an EDL text file. For more information, see Edit Decision Lists

   The Import dialog is displayed.
2. Choose the folder where the project you want to open is stored:
   - Choose a drive and folder from the LOOK IN drop-down list.
   - Choose a folder from the RECENT drop-down list to quickly select a folder from which you have previously opened files.
3. Select a file in the browse window or type a name in the FILE NAME box.

4. Click OPEN.

   If elements in the project could not be imported, a report is displayed.

Exporting a project

1. From the File menu, choose EXPORT, and then choose a project type from the submenu:
   - PREMIERE/AFTER EFFECTS (*.PPROJ): exports your project for use in Adobe Premiere or After Effects project.
   - FINAL CUT PRO 7/DAVINCI RESOLVE (*.XML): exports your project to an XML file for use in Apple Final Cut Pro 7 or DaVinci Resolve.
   - FINAL CUT PRO X (*.FCPXML): exports your project to an XML file for use in Apple Final Cut Pro X.
   - EDL TEXT FILE (*.TXT): exports your project to an EDL text file. ⓘ For more information, see Edit Decision Lists

   The export dialog is displayed.
2. Choose the folder where you want to export the project:
   - Choose a drive and folder from the LOOK IN drop-down list.
   - Choose a folder from the RECENT drop-down list to quickly select a folder from which you have previously opened files.
3. Type a name in the FILE NAME box.
4. Click SAVE.

   If elements in the project could not be exported, a report is displayed.

Archiving projects

Export your project and its associated media.

1. Choose FILE | EXPORT |VEGAS PROJECT ARCHIVE. The Archive dialog is displayed.

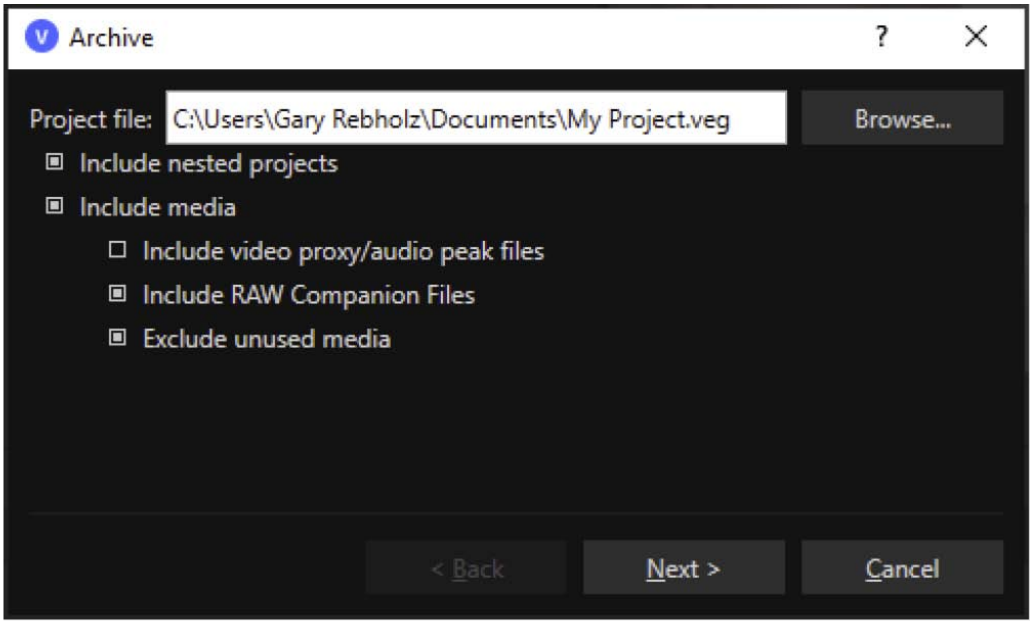
2. Use the Archive dialog to choose options for saving your archive:
    a. In the PROJECT FILE box, choose the folder and file name you want to use to save your archive.
    b. Select the INCLUDE NESTED PROJECTS checkbox if you want to include nested projects in the archive.
    c. Select the INCLUDE MEDIA if you want to copy media files with the archive.
    d. Select the INCLUDE VIDEO PROXY/AUDIO PEAK FILES checkbox if you want to include audio peaks and audio/video proxy files with the archive.

       For more information, see Rebuild audio peaks or Creating proxy files for high-definition editing

    e. Select the INCLUDE RAW COMPANION FILES checkbox to archive your VEGAS Pro projects along with the BRAW files you've used and any companion files that have been created.

       > **NOTE**
       >
       > RAW companion file archives
       >
       > When you add Black Magic RAW files to your project and then adjust the File Format properties, VEGAS Pro creates one or more companion files that store various pieces of information. If you move your BRAW files to a new file location without also moving these companion files, some of the adjustment information will be lost. For example, color adjustments you make with the File Format properties controls will be lost.
       >
       > To ensure that none of this information will be lost when you archive your projects, you can include these companion files in the archive file set.

    f. Select the EXCLUDE UNUSED MEDIA if you want to skip archiving unused media files. If you clear the check box, all project media will be archived.
3. Click the FINISH button to create your project archive.



Project file: C:\Users\Gary Rebholz\Documents\My Project.veg

☒ Include nested projects

☒ Include media

☐ Include video proxy/audio peak files

☒ Include RAW Companion Files

☒ Exclude unused media

Working with P2 Video

The following steps will guide you through the process of using P2 video in your VEGAS Pro project.

1. Shoot your video with a P2 camera.
2. Start a new VEGAS Pro project, and set your project properties to the format that most closely matches your desired output format (or use the MATCH MEDIA VIDEO SETTINGS button in the Project Properties dialog to match an existing media file).

   For more information, see Setting project properties
3. Use the Device Explorer window to import your P2 files.

   For more information, see Using the Device Explorer
4. Drag your clips from the Project Media window to the timeline to create events.
5. Edit your project as needed.

> **TIP**
>
> If you're working on a system with limited processing power, converting to a lower-resolution format will streamline the editing process and allow you to preview your project with higher frame rates. This process is called proxy editing.
>
> For more information, see Creating proxy files for high-definition editing

6. Render your project to any supported rendering format.

If you want to render to P2 format and export the rendered file to a P2 camera, please use the following steps:

1. Verify that your VEGAS Pro project is set match your P2 file settings.
2. From the File menu, choose RENDER AS.
3. In the Render As dialog, choose PANASONIC P2 MXF in the Output Format box.
4. Use one of the following templates, or select a template and click the CUSTOMIZE TEMPLATE button to edit its settings.

   If you use the Custom Template dialog to customize your rendering template, leave all settings at their default values except for the FRAME SIZE control.
5. Use the Output File controls to choose where the files will be rendered. The P2 file format has strict file-naming requirements, so when you render P2 files, you choose an output *folder* rather than rendered *file names*.

   Click the BROWSE button to choose where you want to render:

- To render to a P2 camera that's connected to your computer, choose the CONTENTS folder on the camera's memory card.
- To render to a folder on your computer, choose a folder. If a P2-format CONTENTS folder exists in the selected folder, VEGAS Pro will use the existing folder structure. If no P2-format CONTENTS folder exists, VEGAS Pro will create all necessary files and folders

File names are automatically incremented when you render. For example, if the highest-numbered clip in the selected render folder is ..\CONTENTS\VIDEO\00036R.mxf, the next file you render to that folder will be created as ..\CONTENTS\VIDEO\0004xx.mxf.

> **IMPORTANT** File naming is an important part of the P2 file specification. Do not change the file names in a P2 CONTENTS folder.

Working with HDR video

When working with HDR video footage, there is a convenient HDR MODE setting in the Project Properties dialog to assist you to set several relevant options for HDR in one place.

Selecting HDR10 or HLG in the drop-down menu will turn on all of the following settings:

1. Set Project Pixel format to "32-bit floating point (full range)" in Project Properties Dialog
2. Set appropriate View Transform ("Rec 2020 ST2084 1000 nits (ACES)" for HDR10 and "Rec 2020 HLG 1000 nits (ACES)" for HLG) in Project Properties Dialog
3. Enable "HDR Preview" in the PREFERENCES | PREVIEW DEVICE dialog and the "HDR Preview" toolbar button above preview window, if suitable hardware is available. This applies to both windowed and full-screen preview
4. Set the HDR COMPATIBLE OUTPUT filter in the RENDER AS... dialog. The presets will be filtered based on HDR mode.
5. Enable the MASTER DISPLAY Settings in Project Properties dialog.
6. Selecting OFF will reset all of the settings to default project settings.

Edit Decision Lists

An Edit Decision List (EDL) is a text summary of a project. An EDL lists of all of the media files used, where they are placed on the timeline, and how they are trimmed.

VEGAS Pro EDLs are not the same as those used in traditional linear editing suites and are not intended as a project interchange for other editing applications.

Because of the significant differences between editing applications, projects that are converted from EDLs (or exported to EDLs) are necessarily simplified. Events are inserted into the timeline on a single track, and transition effects from the other application are replaced with crossfades. Projects that are imported from another application's EDL are initially limited to four audio tracks. If you add more tracks, save the project as a .veg file.

Creating an EDL

1. From the File menu, choose EXPORT | EDL TEXT FILE (*.TXT). The export dialog is displayed.
2. Select the drive and folder where you want to store the project.

   > **NOTE** EDL files do not contain information about the locationof source media. Save the .txt file in the same folder as the source media.

3. Type a name in the FILE NAME box.
4. Click OK.

Opening an EDL

1. From the File menu, choose IMPORT | EDL TEXT FILE (*.TXT). The import dialog is displayed.
2. Choose the folder where the project you want to open is stored:
   - Choose a drive and folder from the Look in drop-down list.

     —or—

   - Choose a folder from the RECENT drop-down list to quickly select a folder from which you have previously opened files.
3. Select a file in the browse window or type a name in the FILE NAME box.

4. Click OPEN. If you have not saved the current project, you will be prompted to save your changes.

   Events are placed in the VEGAS Pro timeline. All transitions are replaced with crossfades. You can change the crossfades to other transition types if desired.

   For more information, see Automatic crossfades

Closing a Project

From the File menu, choose CLOSE to close the current project. If you have not saved the project since changes were last made, a dialog appears asking if you want to save your changes.

- Click NO if you want to close the project without saving it.
- Click YES to save your changes.
- Click CANCEL to return to your current project.

> **NOTE** Use the Save As command to save your project under a different name or file type. For more information, see Saving and renaming a project (Save As)

Adding, managing, and arranging media

After you've created a project, you're going to need to add media to it.

The objects you work with in VEGAS® Pro projects are referred to as media files and events:

- Media files are the source audio and video files that are stored on your hard disk. VEGAS Pro projects do not operate on or modify these files. Files can be accessed from the Explorer window.
- An event is an occurrence of a media file on the VEGAS Pro timeline. An event can represent an entire media file or a portion of it. A single media file can be used repeatedly to create any number of different events, since each event can be trimmed independently. An event's position on the timeline determines when it will be played back in your project.

Using the Project Media window

Choose VIEW | WINDOW | PROJECT MEDIA to toggle the display of the Project Media window.

You can use the Project Media window to collect and arrange all the media you will use in your project. You can add media, preview it, view and change file properties, and add effects to a file.

Adding media files to the Project Media window

Files are added to the Project Media window when you open media files, import media, or add media files to the timeline using the Explorer.

You can also drag the files to the Project Media window from the VEGAS Pro Explorer or Windows Explorer.

To add media files from external sources, use the buttons in the Project Media toolbar:

Item	Description
	Import Media: click to add a media file to your project. Besides the button there is an arrow to open a menu to change the function of the button, providing you access to other import functions like importing audio from a CD or capturing video from a DV tape.
	CAPTURE VIDEO: click to start the video capture application specified on the Video tab of the Preferences dialog.
	EXTRACT AUDIO FROM CD: click to extract a track from an audio CD. For more information, see Extracting audio from CDs **IMPORTANT** VEGAS Pro is not intended, and should not be used for, illegal or infringing purposes, such as the illegal copying or sharing of copyrighted materials. Using VEGAS Pro for such purposes is, among other things, against United States and international copyright laws and contrary to the terms and conditions of the End User License Agreement. Such activity may be punishable by law and may also subject you to the breach remedies set forth in the End User License Agreement.
	GET MEDIA FROM THE WEB: click to open the Get Media from the Web dialog, where you can download files to use in your project.

Project Media Hover Scrubbing

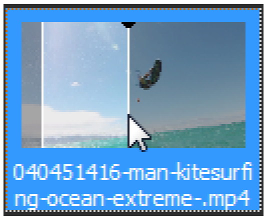
When the Project Media list is in Thumbnail Mode (see below under Changing the appearance of the Project Media window) you can hover with your mouse pointer over the thumbnail picture of a video to scrub thru it. This is like a simplified version of the Trimmer window. As with the big trimmer window, you can click into the picture and drag to select a part of the video. And you can import just this selection into the time line, offering you a way to roughly edit of your movie directly from the project media window.

To make a selection in the thumbnail, you can:

1. Click and drag over the thumbnail to select the part of the item you want to load.
2. Select the item with a left-click.
3. While hovering over the item at the desired location, press I to set the In Point and O to set the Out Point.

To edit the In- and Out-Points:

- Drag the selection borders with the mouse.



> **TIP** You can dynamically re-size the thumbnails by using Ctrl+Mouse Wheel.

To load an item from the Project Media window into the project, you can:

1. Drag it into the time line to the desired position. If there is a selection in the thumbnail, only this part will be used for the new created event.

   > **IMPORTANT** Because media selection is also performed by dragging it is important that you start dragging vertically to not accidentally destroy your selection.

2. Select the track and place the cursor at the position where the item should be inserted.
3. Double-click the item or press the Enter key to load.

Bypass Hover Scrub

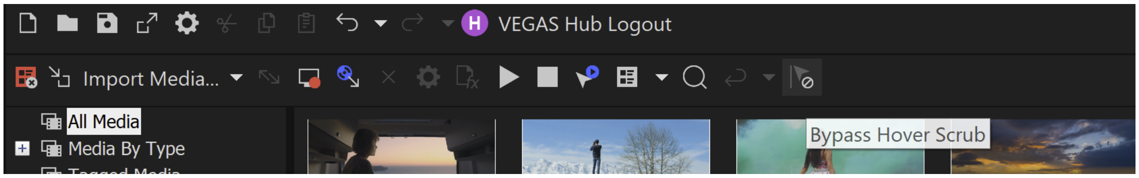
The Bypass Hover Scrub feature enables you to bypass the default hover scrub behavior in the Project Media window. With hover scrub bypassed, you can move your mouse across the thumbnail without scrubbing through the file and thus seeing the thumbnail change.

If you don’t want the thumbnail to change as you move across the thumbnail:

1. Click the BYPASS HOVER SCRUB button .
2. With this button active, point again to the clip.
3. Without holding the mouse button, move the mouse right and left over the thumbnail.

   The thumbnail doesn’t change and you are not scrubbing through the video.

   To reenable the Hover Scrub feature, click the BYPASS HOVER SCRUB button again.



> **NOTE** If you click and drag right and left, you can still set the in and out points. However, without hover scrub active, you won’t see the target frame. So, this means you can still make a general selection of in and out points in order to add just a portion of a file. This could still be quite useful when you work with a long file and know generally the area that holds the frames you want. Remember, you can always trim to your exact frames directly on the timeline once you add your clip.

Cleaning the Project Media list

Click the REMOVE ALL UNUSED MEDIA FROM PROJECT button to remove any files that have not been used on the timeline.

Removing a media file from the project

Click the REMOVE SELECTED MEDIA FROM PROJECT button to remove all selected media files from the Project Media window and project.

If a file is in use by an event on the timeline, you will be prompted to delete the event.

Swapping video files

Click the Swap Media button to replace video files in the project with alternative files with the same file name. You will need to select a folder where the exchange files are stored. Any reference to a video file in the project will be changed to refer to the new file in the specified folder if there is a file with the same name in that folder. The file extension is not relevant.

> **TIP** You can also perform this exchange at render time.

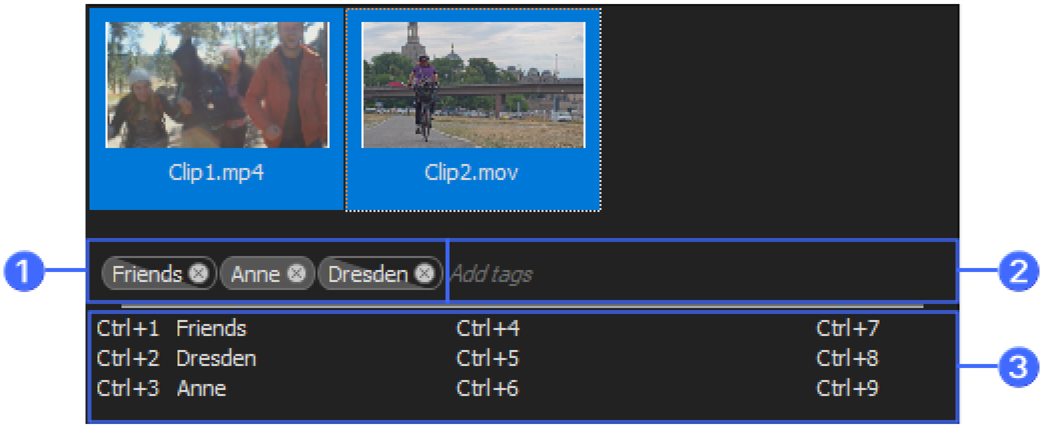
Viewing or editing file properties

Click the PROPERTIES button to display the Properties dialog for the selected media file. For more information, see Viewing or changing media file properties

In most cases, you will not need to edit file properties. However, adjusting the FIELD ORDER setting for video files can help correct jitter when you output your project to a television monitor.

Tagging media files

Use the Media Tags panel in the Project Media window to add tags to your media files. To show or hide the Media Tags panel, click the down arrow next to the VIEWS button and choose MEDIA TAGS.


Clip1.mp4
Clip2.mov
1
Friends ⊗
Anne ⊗
Dresden ⊗
Add tags
2
Ctrl+1 Friends
Ctrl+2 Dresden
Ctrl+3 Anne
Ctrl+4
Ctrl+5
Ctrl+6
Ctrl+7
Ctrl+8
Ctrl+9
3

1	Tags
2	Add Tags Box
3	Quick Tags Area

> **TIP**
> A full tag icon indicates the tag is applied to all of the selected media files.
>
> A partial tag icon indicates the tag is applied to only some of the selected media files.

When you add tags to media files, media bins are created for each tag under the "Tags" folder. For more information, see Sorting your media with bins

Adding tags

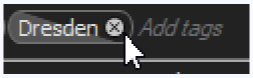
1. Select one or more media files in the Project Media window.
2. Type the tag text in the ADD TAGS box.
3. Press Enter to add the tag to the media files.

> **TIP** You can also add tags using keyboard shortcuts. For more information, see Creating Quick Tags

Removing tags

1. Select one or more media files in the Project Media window.
2. Press Backspace in the ADD TAGS box to remove tags from the media files.

> **TIP**
> You can also click the "x" in the tag icon to remove a tag from a media file:



Creating Quick Tags

Quick Tags allow you to assign tags to keyboard shortcuts that you can use to quickly add tags to media files.

1. Select one or more media files in the Project Media window.
2. Type the tag text in the ADD TAGS box.
3. Press Ctrl+Shift and the number you want to assign for the shortcut. For example, press Ctrl+Shift+1 to assign the tag text to the Ctrl+1 shortcut.
4. Press Enter to add the tag to the media files.

Editing Quick Tags

Right-click the Quick Tags area and choose EDIT QUICK TAGS to display the Edit Quick Tags dialog. You can use this dialog to edit the text of existing Quick Tags or create new Quick Tags.

Configuring 24p pulldown removal

» Right-click a DV AVI file in the Project Media window and choose FILE FORMAT PROPERTIES from the shortcut menu to edit file settings from the file format plug-in associated with the media file type.

For 24p NTSC DV AVI files with 2-3 , you can use this dialog to configure removal of pulldown fields.

In most cases, you will not need to edit pulldown removal settings. However, if the settings were not properly set in the DV header when your video was captured, you can fine-tune pulldown removal without recapturing your video.

1. Right-click an AVI file in the Project Media window and choose FILE FORMAT PROPERTIES from the shortcut menu. The AVI/DV Media Properties dialog is displayed.

   This command is not available for clips that are not AVI or DV or those that use 2-3-3-2 pulldown.

2. Select the ENABLE 2-3 PULLDOWN REMOVAL check box.

   > **NOTE** You can clear this checkbox if you want to override pulldown removal for individual files when the ALLOW PULLDOWN REMOVAL WHEN OPENING 24P DV checkbox is selected on the General tab of the Preferences dialog.

3. Choose a setting from the STARTING FRAME TIMECODE OFFSET drop-down list to indicate what timecode numbers represent which frame in the video sequence.

   For example, if you have an NTSC DV file with 2-3 pulldown created on a Sony JH3 HDCAM deck, the default settings for timecode offset use 0 for the STARTING FRAME TIMECODE OFFSET.

   If you have changed the timecode offsets on the deck (or if you have material with pulldown from another source) you will have to experiment with the settings to determine the correct offset.

4. Check for interlacing:

    1. In the Project Properties dialog, choose a NTSC DV 24p template from the Template drop-down list. For more information, see Setting project properties
    2. Choose the BEST (FULL) setting in the Video Preview window to show full frames.
    3. Step though the clip and look for interlace lines in moving objects or backgrounds.

4. If you see interlace lines, repeat from step 3 and choose a different offset value.
5. When no interlace lines appear, the offset is set correctly.

Adding effects to a media file

Click the MEDIA FX button to add an effect to every occurrence of the selected media file in your project (the source media file is not affected).

Media FX are used for video files only. For more information about adding video effects, see Adding video effects

Previewing a media file

Select the media file you want to preview.

- Click the START PREVIEW button ▶ to begin previewing the media file.
- Click the STOP PREVIEW button ■ to stop previewing the media file.
- Select the AUTO PREVIEW button to automatically preview a media file when you click it.

Changing the appearance of the Project Media window

Click the VIEWS button and choose a setting from the menu to change the display of the Project Media window:

Item	Description
List	Displays a simple list of the file name of each file in the Project Media window.
Details	Displays a list of each file in the Project Media window and a spreadsheet that displays information about the media file: You can control the information that is displayed by right-clicking the Project Media window and choosing VIEW from the shortcut menu. A list of the available fields is displayed in the shortcut menu. Specific fields can be hidden by dragging them off of the Project Media window. The data fields are listed along the top of the Project Media window and can be reordered by dragging them. Click on the tabs along the top to sort the data in ascending or descending order. The COMMENTS field can be used to add notes about a file in the Project Media window. Double-click the field to enter text. This information is saved with the project and is not saved with the media file itself. **NOTE** Depending on your current time ruler format, you may see inconsistencies in the timecode values for clips that you captured. Video Capture uses SMPTE drop time (29.97 fps). If you switch the time format to SMPTE drop time in the VEGAS Pro window, the same timecode information will be displayed in the Video Capture and VEGAS Pro windows.
Thumbnail	Displays the first frame of a video file.
Media Tags	Shows or hides the Media Tags panel. For more information, see Tagging media files

Recapturing video

If you've captured video files from a DV device using Video Capture, you can recapture your clips from the VEGAS Pro window if the media files are deleted.

If a media file cannot be found, any events that refer to the file will display MEDIA OFFLINE, and the clip will be displayed with a generic icon in the Project Media window (if you're using the Thumbnail view).

Select the clips that you want to recapture. Right-click a clip and choose RECAPTURE from the shortcut menu. Video Capture starts in batch capture mode to recapture the clips.

> **NOTE** Depending on your current time ruler format, you may see inconsistencies in the timecode values for clips that you captured. Video Capture uses SMPTE drop time (29.97 fps). If you switch the time to SMPTE drop time in the VEGAS Pro window, the same timecode information will be displayed in the Video Capture and VEGAS Pro windows.

Replacing a media file

You can replace a file in the Project Media window with a different file. Replacing a media file updates every occurrence of the event to use the new media file contents.

1. Right-click a file in the Project Media window, and choose REPLACE from the shortcut menu. The Replace Media File dialog is displayed.
2. In the Replace Media File dialog, select the file that you want to use in place of the current file.
3. Click the OPEN button. The file is replaced in the Project Media window, and every occurrence of the event is updated to use the new media file contents.

Creating video proxy files

» Right-click a video file and choose CREATE VIDEO PROXY to create a proxy file (.sfvp0) alongside the original video file. Proxy files are smaller and faster to work with on the timeline.

For more information, see Creating proxy files for high-definition editing

Using bins to sort your media

Media bins are folders within projects that you can use to organize your media files. For more information, see Sorting your media with bins

Selecting all events that refer to a specific media file

1. Right-click a file in the Project Media window and choose SELECT TIMELINE EVENTS from the shortcut menu. The cursor moves to the first event that uses the media, the timeline scrolls to the cursor, and all events that use the selected media file in the active take are selected.

   For more information, see Using takes as alternate versions of events

2. Hold Ctrl or Shift while choosing SELECT TIMELINE EVENTS from the shortcut menu to add the events to the current selection.

> **TIP**
>
> - When multiple events are selected, press Ctrl to move the edge of the previous or next selected event.
> - When multiple events are selected, press Ctrl+Shift to create a time selection from the previous or next selected event.

Add a high-frame-rate clip to the timeline and adjust its playback rate

» Right-click a clip in the Project Media window and choose ADD AT PROJECT FRAME RATE to create an event at the cursor position and set the event's PLAYBACK RATE value to allow the event to play back using the project frame rate.

For more information, see Working with high-frame-rate (HFR) clips

Matching project video settings to a media file

» Right-click a file in the Project Media window and choose MATCH PROJECT VIDEO SETTINGS to update your project video settings to match the selected file.

> **NOTE** If you choose a VEGAS Pro project (.veg) file, VEGAS Pro will match the settings of the project, not the media within the project.

For more information, see Setting project properties

Previewing media files

You can preview media files from the Explorer window or Project Media window before placing them in your project. When you preview a file, the signal is sent to the Preview bus in the Master Bus window.

Previewing a media file

1. Select a media file in the VEGAS Pro Explorer or Project Media window.
2. Click the START PREVIEW button ▶ in the toolbar to preview the file.

3. Click the STOP PREVIEW button, select a different file, or place the file in the project to stop previewing the file.

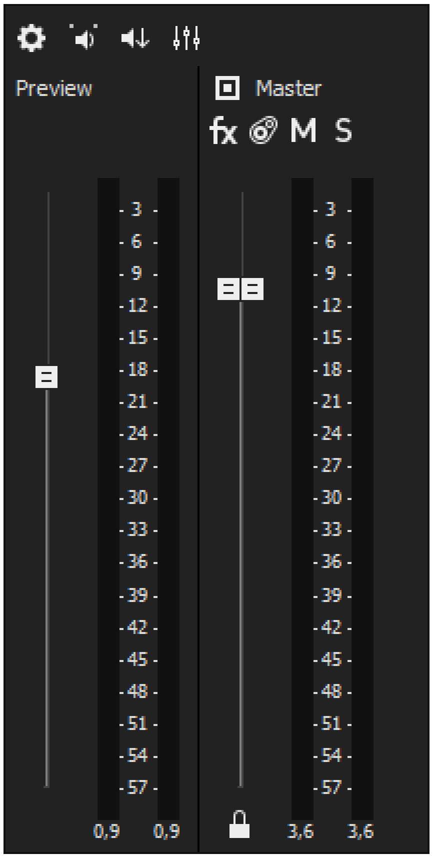
> **TIP**
>
> - To automatically preview selections when you click a media file in the Explorer or Project Media window, select the AUTO PREVIEW button. To turn off Auto Preview, click the AUTO PREVIEW button again.
> - Video is previewed in the Trimmer window. If you want to preview in the Video Preview window, right-click the Trimmer window and deselect the SHOW VIDEO MONITOR command. For more information, see Using the Trimmer

For more information, see Using the Video Preview window

> **TIP** In the Project Media Window, you can hover with your mouse pointer over the thumbnail picture of a video to scrub thru it. Read more under Project_Media Hover Scrubbing

Adjusting audio preview volume

The Preview control in the Master Bus window allows you to view and adjust the playback volume level. If the control is not visible, choose MIXER PREVIEW FADER from the View menu.



Item	Description
Fader	Drag the fader to adjust the playback volume while previewing the audio file.
Meter	Displays the playback level. Right-click and choose a command from the shortcut menu to adjust the range of the meter, reset clip indicators, or hold peaks/valleys.

Adding media files to your project

After previewing the files to determine which media files you want to use in your project, you've several options for adding them to your project.

> **TIP** The volume for new audio tracks is determined by your default track properties.
>
> For more information, see Setting default track properties

NOTE

- Select the ALLOW PULLDOWN REMOVAL WHEN OPENING 24P DV checkbox on the General tab of the Preferences dialog if you want to remove when you open 24 fps progressive-scan DV video files. When the checkbox is cleared, 24p video will be read and edited as 29.97 fps interlaced video (60i). For more information, see General Tab
- Select the IMPORT AUDIO AT PROJECT TEMPO checkbox on the Audio tab of the Preferences dialog if you want ACID loops to be stretched to match the project tempo (specified on the Ruler tab of the Project Properties dialog) when you add them to the timeline or preview from the Explorer window. Clear the IMPORT AT PROJECT TEMPO checkbox if you want to ignore tempo information. For more information, see Audio Tab and Setting project properties
- When you add a multichannel audio file (.wav/.wav64, .avi, .mxf, ATRAC, and BWF) to your project, the audio is added across tracks. For example, if you import a four-channel WAV file, the audio will be added to four adjacent tracks. For control over which channels are used by each event, right-click a multichannel audio event, choose CHANNELS from the shortcut menu, and choose a command from the submenu. For more information, see Audio channels
- When you add a multistream audio file to your project, you can choose which stream you want to use by right-clicking the event, choosing STREAM from the shortcut menu, and then choosing a stream from the submenu.
- 5.1-channel audio from DVD camcorders will be downmixed to stereo when importing into a stereo project. When importing into a 5.1 surround project, audio will be added to separate tracks for the center, front, rear, and LFE channels.
- If VEGAS Pro cannot read frames in a video event, they will be displayed in red in the timeline (those frames will be black in the Video Preview window and the rendered output):
- If you want to use RAW camera files in your project, the Microsoft Camera Codec Pack will allow you to view RAW camera files and add them to the timeline.

> - The first time you add video media to the timeline, VEGAS Pro will ask you whether you want to match your project video settings to match the first video media you add to the timeline.
>
>   > **NOTE** If you choose a VEGAS Pro project (.veg) file, VEGAS Pro will match the settings of the project, not the media within the project.

Using the Windows Explorer to add media and create events

If you're using the Windows Explorer to browse your computer for media, you can add a media file quickly by dragging it to the VEGAS Pro window.

The media file is added to the Project Media window, and an event is created where you drop the file. If you drop the file on an area of the timeline that does not contain a track, a new track will be created.

Using the VEGAS Pro Explorer to add media and create events

If you're using the VEGAS Pro Explorer to preview files, you can add media by performing either of the following actions:

- Double-click a media file or VEGAS Pro project to add it to your project. The file is added to the Project Media window, and an event is created at the cursor position.
- Drag a media or project file from the VEGAS Pro Explorer to the timeline. The file is added to the Project Media window, and an event is created where you drop the file.

TIP

- Drag a .veg file to the timeline to add it to the current project as a nested project. For more information, see Nesting projects
- Double-click a .veg file in the Explorer window to open a project.
- To add a track from an audio CD, browse to your CD drive and double-click a .cda file (or drag it to the timeline). You will be prompted to type a name for the file, and then the track will be extracted. After the track is extracted, it will be added as an event on an audio track in your project.
- If you're adding video files to the timeline, you can choose to add only the audio or video stream to your project. Right-click and drag the files to the timeline. When you drop the files, a shortcut menu is displayed. Choose AUDIO ONLY or VIDEO ONLY from the shortcut menu and choose a command from the submenu to arrange the event on the timeline.

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Adding multiple files and creating events

If you're using the Explorer or Project Media window, you can add several media files to your project at once.

1. Select the media files or VEGAS Pro projects you want to use.
2. Right-click the selected files and drag them to the timeline. A shortcut menu is displayed.
3. Choose a command from the shortcut menu to indicate how you want to arrange the events on the timeline.

Command	Description
Add Across Time	Adds the selected media files end-to-end on the track where you drop them. **TIP** Select the AUTOMATICALLY OVERLAP MULTIPLE SELECTED MEDIA WHEN ADDED checkbox on the Editing tab of the Preferences dialog if you want to overlap events when you add them to the same track. AUTOMATIC CROSSFADES must be turned on to use this feature. For more information, see Editing Tab and Automatic crossfades To change the amount of overlap between events, adjust the AMOUNT setting in the Cut-to-overlap conversion section of the dialog.
Add Across Tracks	Adds the selected media files as events on adjacent tracks.
Add As Takes	Adds the selected media files as multiple takes of the same event. For more information about choosing takes, see Using takes as alternate versions of events
Video Only	If you're dragging video files to the timeline, you can choose to add only the video stream to your project. Choose VIDEO ONLY from the shortcut menu and choose a command from the submenu to indicate how you want to arrange the events on the timeline.
Audio Only	If you're dragging video files to the timeline, you can choose to add only the audio stream to your project. Choose AUDIO ONLY from the shortcut menu and choose a command from the submenu to indicate how you want to arrange the events on the timeline.

> **NOTE** If you change your mind later and want to add a missing media stream to a video/audio only event, right click on an event and chose Add Missing Stream for Selected Event

4. Events are created where you drop the files (and the media files are added to the Project Media window if you're using the Explorer).

   The order of the events is determined by file that you click before dragging and the order of the files in the Explorer or Project Media window: for example, select the files A.WAV, B.WAV, AND C.WAV. Right-click B.WAV and drag the files to the timeline. When the shortcut menu is displayed, choose ADD ACROSS TIME. When you drop the files, B.WAV will be added as the first event, followed by A.WAV and C.WAV.

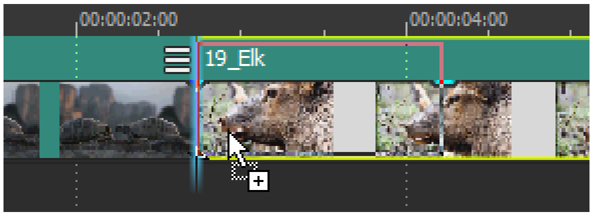
Adding media over other events (punching-in vs. inserting)

When you drop a file on a blank spot on the timeline, an event is created at that location. What happens if you drop a file on an existing event? You can either punch-in or insert an event.

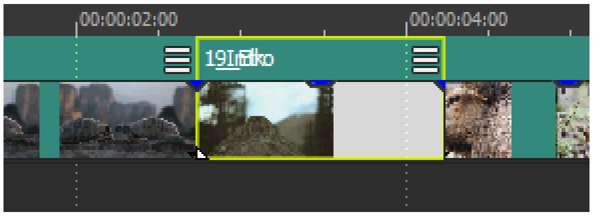
Punch-in

If you add a media file in the middle of another event, a punch-in is created: an event is created where you drop the file, and the new event simply lies on top of any existing events on the track.

1. Drag a media file from the VEGAS Pro Explorer or Project Media window to the middle of an existing event (or position the cursor and double-click a file in the VEGAS Pro Explorer or Project Media window).



2. The original event maintains its position on the timeline, but cuts to the new event where you added the new file:



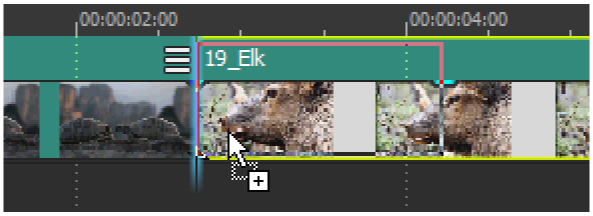
Inserting media

By using auto ripple, you can drop a media file in timeline and automatically move downstream events to make space for the new event. For more information, see [Post-edit ripple]()

1. Select the AUTO RIPPLE button.
2. Drag a media file from the VEGAS Pro Explorer or Project Media window to a position on the timeline between two events (or position the cursor and double-click a file in the VEGAS Pro Explorer or Project Media window).

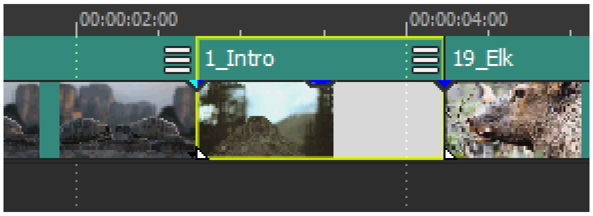
   If you want to insert an event in the middle of an existing event, you can split the existing event before adding the media file.

   For more information, see [Splitting events]()



3. When you add the file, the events to the right move to make space for the new

event:



Using the Project Media window to add media without creating events

You can use the Project Media window to collect and arrange all the media you will use in your project before creating events on the timeline.

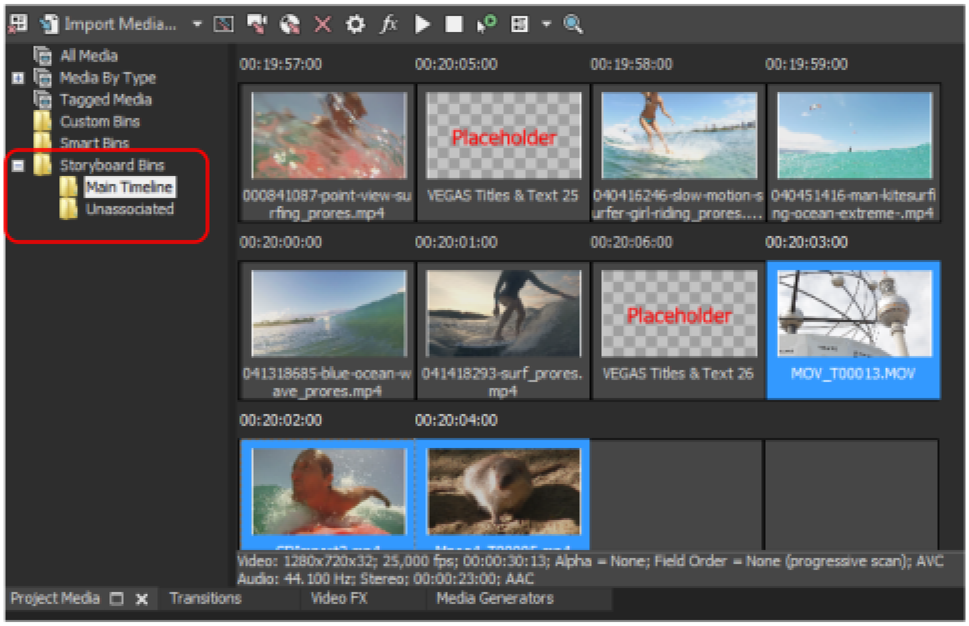
From the File menu, choose IMPORT, and then choose MEDIA from the submenu (or click the IMPORT MEDIA button in the Project Media window) to add a media file to your project without adding it to the timeline.

When you're ready to start adding events, you can drag media files from the Project Media window to the timeline.

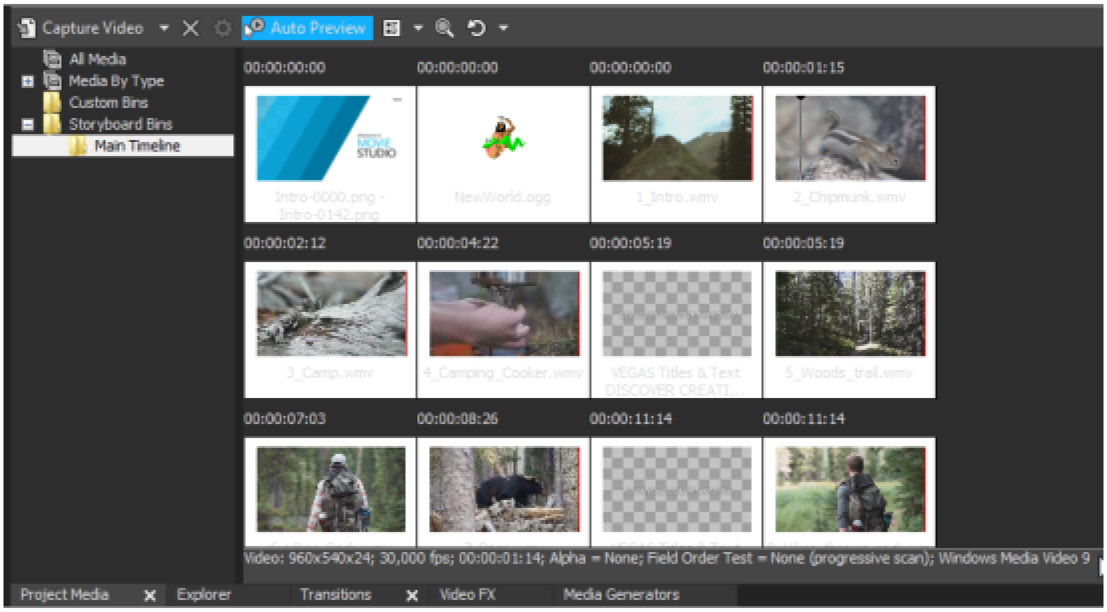
For more information, see Using the Project Media window

Using Storyboards

VEGAS Pro enables you to quickly sequence your video in a lean, efficient storyboard workflow.


Import Media...
All Media
Media By Type
Tagged Media
Custom Bins
Smart Bins
Storyboard Bins
Main Timeline
Unassociated
00:19:57:00
00:20:05:00
00:19:58:00
00:19:59:00
000841087-point-view-surfing_prores.mp4
VEGAS Titles & Text 25
040416246-slow-motion-surfer-girl-riding_prores....
040451416-man-kitesurfing-ocean-extreme-.mp4
Placeholder
00:20:00:00
00:20:01:00
00:20:06:00
00:20:03:00
041318685-blue-ocean-wave_prores.mp4
041418293-surf_prores.mp4
VEGAS Titles & Text 26
MOV_T00013.MOV
Placeholder
00:20:02:00
00:20:04:00
Project Media
Transitions
Video FX
Media Generators

Video: 1280x720x32; 25,000 fps; 00:00:30:13; Alpha = None; Field Order = None (progressive scan); AVC
Audio: 44.100 Hz; Stereo; 00:00:23:00; AAC


Capture Video
Auto Preview
All Media
Media By Type
Custom Bins
Storyboard Bins
Main Timeline
00:00:00:00
00:00:00:00
00:00:00:00
00:00:01:15
Intro-0000.png - Intro-0142.png
NewWorld.ogg
1_Intro.wmv
2_Chipmunk.wmv
00:00:02:12
00:00:04:22
00:00:05:19
00:00:05:19
3_Camp.wmv
4_Camping_Cooker.wmv
VEGAS Titles & Text DISCOVER CREATI...
5_Woods_trail.wmv
00:00:07:03
00:00:08:26
00:00:11:14
00:00:11:14
Project Media
Explorer
Transitions
Video FX
Media Generators

Video: 960x540x24; 30,000 fps; 00:00:01:14; Alpha = None; Field Order Test = None (progressive scan); Windows Media Video 9

Storyboards are listed as a bins type in the PROJECT MEDIA window. Each project has at least one storyboard, the MAIN TIMELINE storyboard. The MAIN TIMELINE storyboard interacts directly with the main project timeline so that anything you do in one is reflected in the other.

Adding media to a storyboard

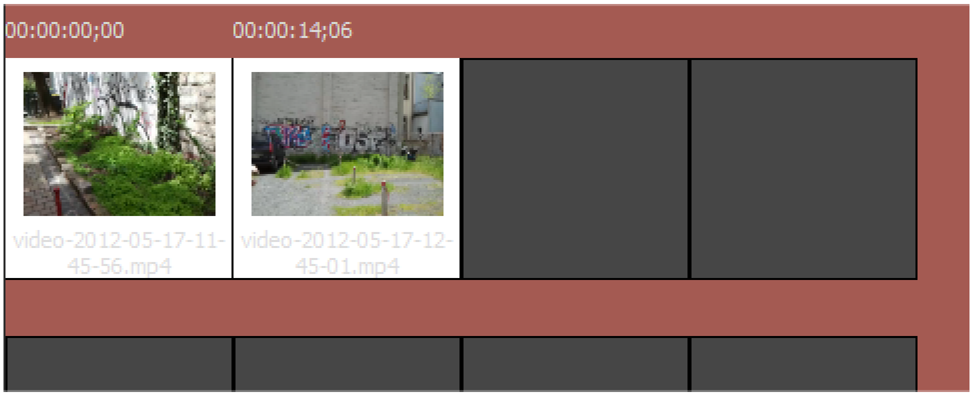
There are two general ways to add media to a storyboard:

- Add media directly to your timeline. This also automatically adds that media to the MAIN TIMELINE storyboard and the timeline always matches the MAIN TIMELINE storyboard.
- Add media directly to the storyboard:
    1. Navigate to the storyboard you want to work with in the PROJECT MEDIA tree view
    2. Drag files from the EXPLORER Window and drop them into the storyboard cells:
        - Drop a file onto an empty cell to place the file there.
        - If you leave empty cells between the previous full cell and the one you are dropping the new file on, VEGAS Pro fills those empty cells with placeholder text files.
        - You can change the name of these placeholder files to leave yourself note about what you eventually want to put there.
        - You can drop a new file between two existing storyboard files to insert that file between the two existing ones.
        - You can drop a new file directly on top of an existing file in the storyboard to replace the existing file with the new one
    3. You can also drag files from the PROJECT MEDIA window ALL MEDIA (or any other bin) into a storyboard:
        1. Drag the file from ALL MEDIA and hover over the storyboard heading. After a moment, the STORYBOARD Bins heading expands to show you all of your storyboards.
        2. Hover over the storyboard you want to add the file to. After a moment that storyboard opens.
        3. Drop the file into the storyboard. This moves the file from any custom bin or storyboard into this storyboard. In order to copy the file from

one bin or storyboard to the new storyboard so that it appears in both bins, hold the Ctrl key as you follow these steps.

Synchronization between the Timeline and the Main Timeline Storyboard

When you perform an edit on the timeline, the Main Timeline storyboard does not reflect the state of the timeline any more, it is not synchronized any more. You can see this by the colored background of the storyboard.



To synchronize the Main Timeline storyboard with the timeline, click the REFRESH STORYBOARD button ↻. Click on the down arrow near this button to switch to AUTOMATICALLY SYNCHRONIZE MAIN TIMELINE STORYBOARD. Now the storyboard is synchronized automatically after each edit on the timeline.

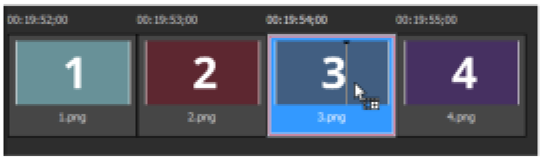
> **NOTE** Note that this will affect the responsiveness of the program when performing complex edits.

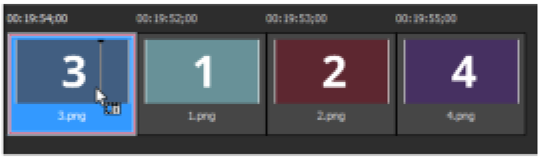
> **IMPORTANT** While the storyboard is out of sync with the timeline, VEGAS Pro will not allow modifications of the storyboard until it is refreshed and will prompt you with the option to refresh.

Changes in the main timeline storyboard are always reflected on the timeline so there's no need for a synchronization in this direction.

Moving items around in the storyboard (organizing the storyboard)

Once files are placed in your storyboard, you can arrange them however you want. To move a file from one storyboard cell to another, hold the Alt key, drag the thumbnail to the new location, and release the mouse button to drop the thumbnail into the new position. The existing event in that spot and all following moves to the right to make room, the clips that follow the moved clip move to the left to close the gap.





> **NOTE** The Alt key is necessary because simply dragging a thumbnail sets a selection on the media (see Project Media Hover Scrubbing for details)

Previewing a storyboard

Once you have files in your storyboard, you can preview the storyboard to quickly review your edits so far:

- To preview a single file from the storyboard, select the file and click the Project Media window START PREVIEW button ▶.
- To preview more than one file, select the files you want to view (use the Ctrl or Shift keys to select multiple files) and click the Start Preview button. This previews only the selected files one after the other in the order in which they appear in the storyboard.
- To preview all files in the storyboard sequentially, either select all of them, or deselect all of them and then click the Start Preview button. If all files or no files are selected, this will preview then entire storyboard from start to finish.

Creating a new storyboard

While each project has a Main Timeline storyboard by default, you can add as many new storyboards as you want. This enables you to experiment with alternate sequences for your project. To create a new storyboard, right-click the STORYBOARD BINS heading in the Project Media tree list and choose CREATE NEW BIN from the context menu.

Additional storyboards are not associated with the main timeline and changes you make to them will not be reflected on the main timeline, nor will changes to the main timeline have any affect on unassociated storyboards.

Adding a storyboard to the timeline

Changes made to the MAIN TIMELINE storyboard are automatically reflected in the main timeline, so you don't need to do anything special to add the MAIN TIMELINE storyboard to the timeline.

If you want to add the contents of an unassociated storyboard to your main timeline:

- Drag one or more files from the storyboard to the main timeline
- Drag the Storyboard bin to the timeline to add all files in the storyboard to the timeline

> **NOTE** When you drag files from an unassociated storyboard to the timeline, the MAIN TIMELINE storyboard is updated to reflect the changes made to the timeline

Working with high-frame-rate (HFR) clips

If you want to use high-frame-rate clips to create slow-motion effects, you need to adjust the clip's playback rate to conform to the project's frame rate.

You can use the Project Media window to set the clip's playback rate when creating events, or you can use the Event Properties dialog to edit events already on the timeline.

Adding HFR clips from the Project Media window

1. Add your clips to the Project Media window. For more information, see [Using the Project Media window]
2. Click to position the cursor in the timeline where you want to create an event.
3. Right-click the clip in the Project Media window and choose ADD AT PROJECT FRAME RATE.

   An event is created at the cursor position, and the event's PLAYBACK RATE value is calculated to allow the event to play back using the project frame rate. For example, if you add a 120 fps clip to a project with a frame rate of 30 fps, the event's playback rate will be set to .25.

   > **NOTE**
   >
   > Event playback is limited to a range of .25 to 4.0x playback. If the event needs to be modified beyond that range, a velocity envelope is applied. For example, when using a 240 fps clip in a 24 fps project, the event's playback rate is set to .25, and a velocity envelope is applied to achieve the required playback rate of .1. In these cases, the event's audio will not play in sync with the video.
   >
   > If you need to check or adjust your project's frame rate, you can use the Project Properties dialog. For more information, see [Setting project properties]

Setting the playback rate of an existing event

1. Right-click the clip on the timeline and choose PROPERTIES from the shortcut menu.
2. On the Video Event tab of the Project Properties dialog, click the CONFORM TO PROJECT FRAME RATE button.

   The event's PLAYBACK RATE value is calculated to allow the event to play back using the project frame rate. For example, if you add a 120 fps clip to a project with a frame rate of 30 fps, the event's playback rate will be set to .25.

> **NOTE**
>
> Event playback is limited to a range of .25 to 4.0x playback. If the event needs to be modified beyond that range, a velocity envelope is applied. For example, when using a 240 fps clip in a 24 fps project, the event's playback rate is set to .25, and a velocity envelope is applied to achieve the required playback rate of .1. In these cases, the event's audio will not play in sync with the video.
>
> If you need to check or adjust your project's frame rate, you can use the Project Properties dialog. For more information, see Setting project properties

3. Trim the event end to adjust the event so all frames are visible. For more information, see Adjusting an event's length

Adding layered PSD files to the timeline

You can add layered PSD files to the VEGAS Pro timeline, with each layer of the file being an event on its own track.

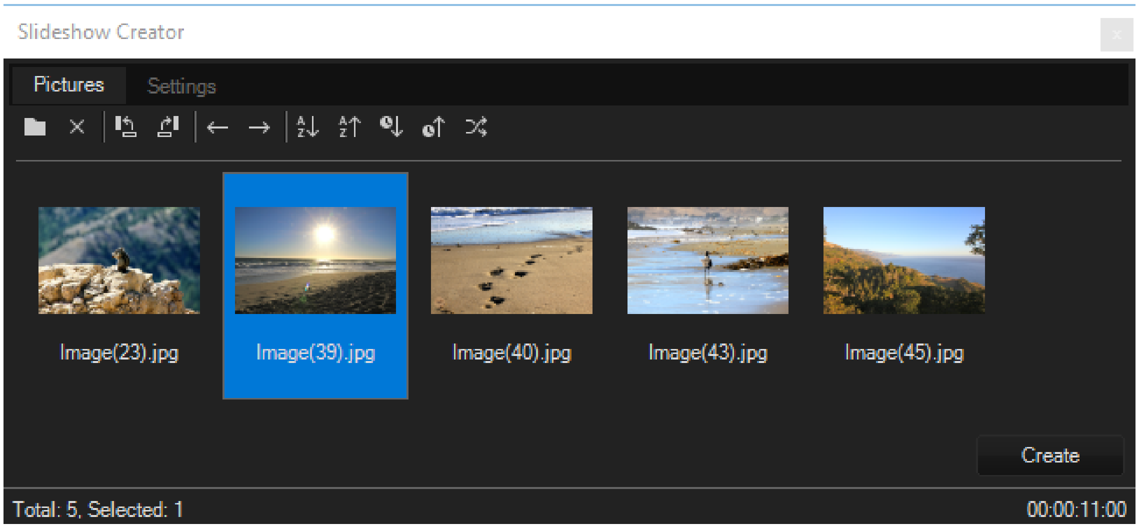
These events are just like other events in VEGAS Pro software. For example, you could use track motion to move layers individually, use parent tracks to group and move layers together, apply track effects to animate just one layer of the graphic, or you could replace a layer with a video.

1. Select a layered PSD file in the Explorer or Project Media window.
2. Right-click and drag the file to the timeline.
3. When you release the mouse button, a shortcut menu is displayed. Choose ADD ACROSS TRACKS to import the PSD layers across tracks in the timeline.

   The PSD layers, including the composite layer, are now available as streams. You can change an event’s stream by right-clicking an event, choosing STREAM from the shortcut menu, and then choosing the stream you want to use for the event.

Inserting a Slideshow

VEGAS Pro offers the SLIDESHOW CREATOR, where you can create slideshows of still photos in seconds. Just choose your photos and decide on a few details.


Slideshow Creator
Pictures
Settings
Image(23).jpg
Image(39).jpg
Image(40).jpg
Image(43).jpg
Image(45).jpg
Create
Total: 5, Selected: 1
00:00:11:00

- Open the Slideshow Creator and select your Photos.

  1. In the VEGAS Pro menu bar, go to INSERT | SLIDESHOW, or right-click in a video track and choose INSERT SLIDESHOW. The SLIDESHOW CREATOR window appears with the PICTURES tab open by default.
  2. Click either the ADD PICTURES text or the folder icon 📁 in the upper left. In the Open window, go to the folder which contains your images.
  3. Select all the images, or CTRL-click to pick individual images. Click OPEN. The Slideshow Creator window populates with the images you chose.

- Adjust your Photos

  Arrange the sequence to your preference. You can drag individual images into a custom order, or you can use buttons for automatic arrangement.

If you need to remove a photo, select it and click the DELETE button.

Click ROTATE COUNTERCLOCKWISE or ROTATE CLOCKWISE to change the orientation of any selected images.

Click MOVE SELECTED -1 to move selected images ahead by one in the sequence. Click MOVE SELECTED +1 to move them further back by one.

Click SORT A TO Z or SORT Z TO A for alphabetical or reverse alphabetical order.

Click SORT NEW TO OLD or SORT OLD TO NEW for chronological or reverse chronological order.

Click SHUFFLE for random order.

- Set Photo Length and Transition Style

» Click the SETTINGS tab.

Slideshow Placement	Under Slideshow Placement, choose if you want your slideshow to begin at the timeline cursor, or type in an exact frame on the timeline where you'd like the slideshow to begin.
Duration	Set the length you want each photo to be on the screen. You can also type in an exact length for your slideshow. The Slideshow Creator automatically adjusts the duration of each photo proportionally so the sequence fits within the time you defined.
Effects	Click the EFFECTS drop-down menu in the EFFECTS box, which shows your choices for the transition style between images. You can choose styles which add pan and/or zoom animation to your images automatically. If you choose a specific style, all of the transitions in the slideshow will be that style. If you'd like mixed transitions, choose Random. Define the length of transition between images with the Overlap value.

- Click CREATE. Within seconds, your slideshow appears on the timeline at the point you chose under SLIDESHOW PLACEMENT.

Importing media from a project file

From the File menu, choose IMPORT, and then choose MEDIA FROM PROJECT from the submenu to add media from another VEGAS Pro project file to your project.

Using this feature, you can create small, template projects to streamline frequent editing tasks.

> **NOTE** Generated media and offline media files are not imported.

1. From the File menu, choose IMPORT, and then choose MEDIA FROM PROJECT from the submenu. The Import Media dialog box is displayed.
2. Choose the folder where the file you want to open is stored:
    - Choose a drive and folder from the LOOK IN drop-down list.
    - Choose a folder from the RECENT drop-down list to quickly select a folder from which you have previously opened files.
3. Select a file in the browse window or type a name in the FILE NAME box.
4. If you want to import the project's media bins, select the IMPORT BINS check box.

    ⓘ For more information, see Sorting your media with bins

    Select the MERGE WITH EXISTING BINS checkbox if you want to merge the imported project's bins with the current project. When the checkbox is cleared, a bin is created using the imported project's name, and the project's bins are imported inside that bin.
5. Click OPEN.
6. The project's media is added to the Project Media window. ⓘ For more information, see Using the Project Media window

Importing Broadcast Wave Format files

You can use Broadcast Wave Format (BWF) files to exchange audio between audio editors or broadcasting platforms.

Broadcast Wave Format files are similar to standard .wav files, but they contain additional metadata including timestamps that tell the software where to add audio on the VEGAS Pro timeline.

> **NOTE** You can also add Broadcast Wave Format files to your project by dragging them from the Explorer window to the timeline. However, if you drag a BWF file to the timeline, events are created where you drop the file. Using the Import Broadcast Wave dialog ensures that events are arranged according to the timestamps in the file.

1. From the File menu, choose IMPORT, and then choose BROADCAST WAVE FORMAT from the submenu. The Import Broadcast Wave Format dialog is displayed.
2. Choose the folder where the project you want to open is stored:
   - Choose a drive and folder from the LOOK IN drop-down list.
   - Choose a folder from the RECENT drop-down list to quickly select a folder from which you have previously opened files.
3. Select the files you want to open in the browse window.

   Information about the selected files is displayed at the bottom of the Import Broadcast Wave dialog.
4. From the ARRANGE drop-down list, choose a setting to indicate how you want to arrange audio events on the timeline:

Setting	Description
Add across tracks	A separate track is created for each BWF file you import.
Add across time	All selected BWF files are added to a single track.

> **NOTE** Audio from multichannel BWF files is always added across tracks, regardless of the ARRANGE setting. For example, if you import a four-channel BWF file, the audio will be added to four adjacent tracks. For control over which channels are used by each event, right-click a multichannel audio event, choose CHANNELS from the shortcut menu, and choose a command from the submenu. For more information, see Audio channels

5. If you chose ADD ACROSS TRACKS in step 4, choose a setting from the ORDER TRACKS drop-down list to indicate how you want to arrange the tracks in the track list:

Setting	Description
By timestamp	Sorts tracks chronologically using the timestamp in each file. Select a file in the Import Broadcast Wave dialog to display its timestamp at the bottom of the dialog.
Alphabetically by filename	Sorts tracks alphabetically using the names of the files you import.

6. Choose a setting from the POSITIONING drop-down list to indicate where imported audio will be added to the timeline.

Setting	Description
Use ruler time	Adds each imported file to the VEGAS Pro timeline at the exact position indicated by its timestamp. For example, if you import a BWF file with a timestamp of 00:00:30;00, the media would be added to the timeline at the thirty-second mark on the ruler.
Relative to cursor	Adds each imported file to the VEGAS Pro timeline and offsets the timestamp value by the cursor position. For example, if you position the cursor at 00:00:10;00 before importing a BWF file with a timestamp of 00:00:30;00, the media would be added to the timeline at the forty-second mark on the ruler.

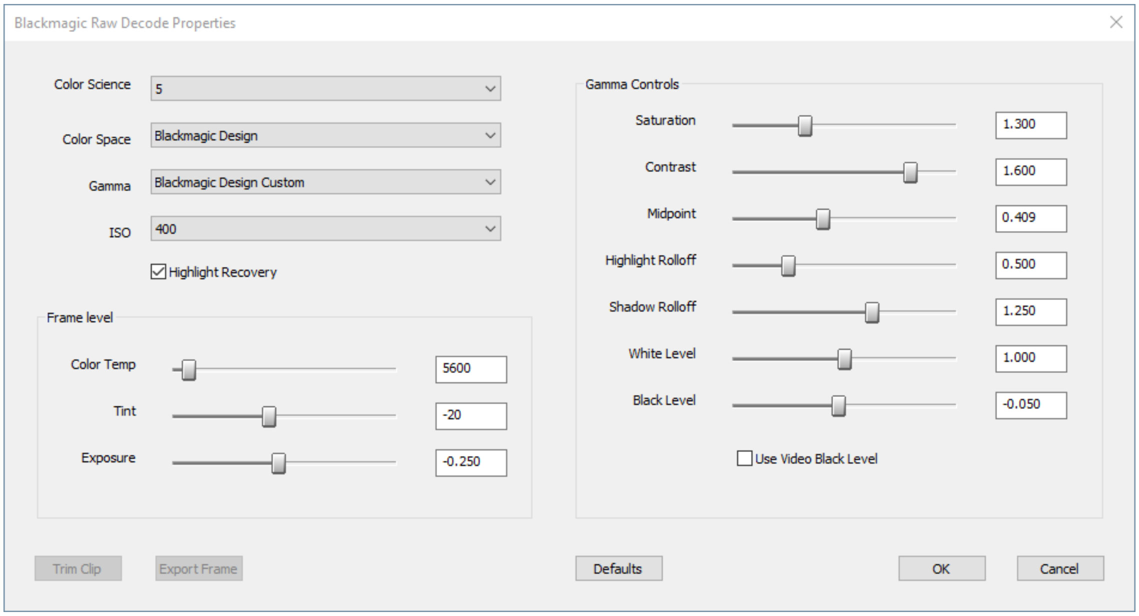
7. Click OPEN. The selected files are imported and added to the timeline of the current project.

Importing Blackmagic RAW Format files

> **NOTE** This feature is still in beta. Some features may not work as expected.

Blackmagic RAW is a lossless video codec that offers the benefits of RAW recording, such as the ability to set ISO and white balance after shooting. It also offers lower bitrates and fast CPU and GPU decoding.

VEGAS Pro supports Blackmagic RAW files. You can add these clips to your timeline just as you would any other file. Once you have them on your timeline, you can use all of the normal editing tools to work with them.



Blackmagic Raw Decode Properties

Color Science: 5
Color Space: Blackmagic Design
Gamma: Blackmagic Design Custom
ISO: 400
☑ Highlight Recovery

Frame level
Color Temp: 5600
Tint: -20
Exposure: -0.250

Gamma Controls
Saturation: 1.300
Contrast: 1.600
Midpoint: 0.409
Highlight Rolloff: 0.500
Shadow Rolloff: 1.250
White Level: 1.000
Black Level: -0.050
☐ Use Video Black Level

To adjust the RAW settings for the clip

- Right-click the clip in the PROJECT MEDIA window, and select FILE FORMAT PROPERTIES from the context menu. These controls enable you to adjust various RAW settings, such as color temperature or ISO.
- If you've made adjustments to these controls and want to reset them to their default settings, click the DEFAULTS button.

NOTE In the initial implementation, to adjust the Gamma Controls settings, first select Blackmagic Design Custom from the Color Space drop-down list.

> **NOTE** The process of working with raw files and adjusting the format settings can create several companion files, some of which are generated only after you add the file to your timeline. You'll find these files in the same folder that you stored your original raw file in and they'll have the same name as the video file, but with different extensions. If you move your raw file to a new file system location, make sure to move all of the companion files along with it. If you don't, returning to the camera defaults may have unpredictable results, your proxy files may not function properly, and other issues may arise.

Sorting your media with bins

When you're creating your masterpiece, your project is likely to get a little unwieldy—you can't express creative genius with a handful of media files, after all.

The detailed view of the Project Media window helps you sort your media files using their attributes, but for more control, you can create bins. Bins are folders within projects that you can use to organize your media files.

Media bins are virtual folders that are saved with your project. They do not affect the way media is saved on your computer.

> **TIP**
>
> - Bins are automatically created for each media tag. For more information, see Tagging media files
> - Bins are automatically created for each type of media in your project: audio, video, and still images.

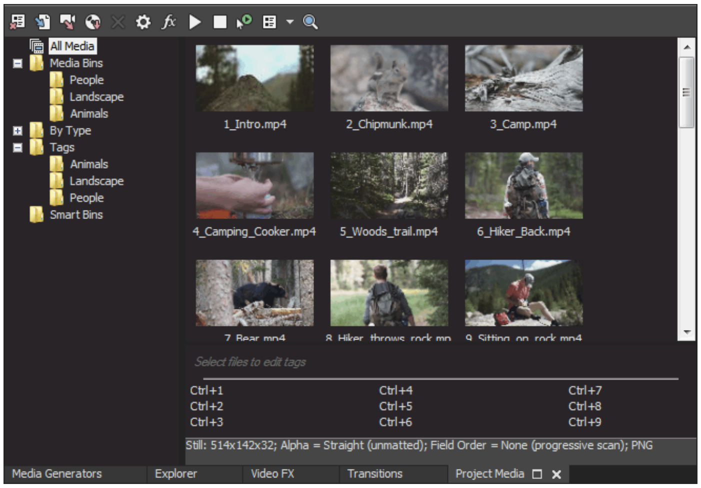
Creating a bin

Right-click the parent bin where you want to create a new bin and choose CREATE NEW BIN from the shortcut menu.

The new bin is created inside the bin you clicked.

Adding media to a bin

1. Browse your existing bins to find the media file you want to move. The All Media folder contains all media files in your project.


All Media
Media Bins
People
Landscape
Animals
By Type
Tags
Animals
Landscape
People
Smart Bins
1_Intro.mp4
2_Chipmunk.mp4
3_Camp.mp4
4_Camping_Cooker.mp4
5_Woods_trail.mp4
6_Hiker_Back.mp4
7_Bear.mp4
8_Hiker_throws_rock.mp
9_Sitting_on_rock.mp4
Select files to edit tags
Ctrl+1
Ctrl+2
Ctrl+3
Ctrl+4
Ctrl+5
Ctrl+6
Ctrl+7
Ctrl+8
Ctrl+9
Media Generators
Explorer
Video FX
Transitions
Project Media

Still: 514x142x32; Alpha = Straight (unmatted); Field Order = None (progressive scan); PNG

2. Drag a file from the right pane to a bin.

Searching media bins

1. Right-click a media bin and choose SEARCH MEDIA BINS from the shortcut menu.
2. The Search Media Bins dialog is displayed.
3. Use the drop-down lists in the Search Media Bins dialog to set your search conditions, and then click the SEARCH button to search the selected bin and all subbins.
4. Your search is added to the folder list. Click the SEARCH RESULTS icon to view the matching files.

> **TIP** Right-click the SEARCH RESULTS icon and choose SAVE AS BIN from the shortcut menu to save the results of your search as a new media bin.

Using smart bins

Smart bins are saved search results that are automatically updated when new media items match the search results. You can also edit the search criteria of an existing smart bin.

Creating a smart bin

Right-click the SEARCH RESULTS icon and choose SAVE AS SMART BIN from the shortcut menu to save the results of your search as a new smart bin.

Editing a smart bin

Right-click the smart bin and choose EDIT SEARCH from the shortcut menu to display the Search Media Bins dialog and edit your search conditions. Click the SEARCH button when you are done.

Automatically adding recorded or captured files to a media bin

Select a media bin if you want to automatically add your recorded audio to a media bin.

If the ADD CAPTURED CLIPS TO MEDIA POOL checkbox is selected in the Video Capture post-capture dialog, your captured clips will be added to the selected media bin.

Deleting media from a bin

1. Select a media file.
2. Press Delete on your keyboard.
   - If the All Media folder is selected, the file will be removed from your project.
   - If a media bin is selected, the file is removed from the bin, but remains part of your project. The file is still available in the All Media folder.

Viewing or changing media file properties

In the Project Media window, click the MEDIA PROPERTIES button ⚙ to display the Properties dialog for the selected media file.

The application will try to detect the properties of your media files automatically. In most cases, you will not need to edit file properties.

Editing properties for an audio file

Select an audio file in the Project Media window and click the MEDIA PROPERTIES button ⚙ to display the Properties dialog.

> **TIP** You can also view the properties for the media file associated with an event. Right-click the event, choose PROPERTIES from the shortcut menu, and click the Media tab.

The following settings are available for audio files.

Item	Description
File name	Displays the current media file name and location.
Tape name	This can be used to display the name of the tape from which you recorded the audio. The name can be edited here or in the corresponding field in the Edit Details window. For more information, see Using the Edit Details Window
Stream	If a file contains multiple streams, you can use this control to select the stream for which you want view properties.
Attributes	Displays the file's , , number of channels, and length.
Format	Displays the compression format of the file.

Editing properties for a video file

Select a video file in the Project Media window and click the MEDIA PROPERTIES button ⚙ to display the Properties dialog.

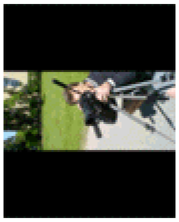
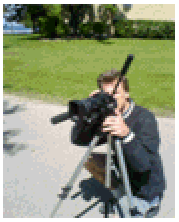
> **TIP** You can also view the properties for the media file associated with an event. Right-click the event, choose PROPERTIES from the shortcut menu, and click the Media tab.

The following settings are available for video files.

Item	Description
File name	Displays the current media file name and location.
Tape name	This can be used to display the name of the tape from which you captured the video. The name can be edited here or in the corresponding field in the Edit Details window. ℹ For more information, see [Using the Edit Details Window]()
Use timecode in file	Select this radio button to accept the default timecode settings.
Use custom timecode	Select this radio button to specify a beginning value for the timecode.
Stream	If a file contains multiple streams, you can use this control to select the stream for which you want view properties.
Format	Displays the compression format of the file.
Attributes	Displays the frame size, in pixels (x,y). color depth, and length of the file.
Field order	Choose a setting from the drop-down list to change the field order of the file. Consult your capture/video output card's manual for the proper field order. ● NONE (PROGRESSIVE SCAN) – Select this option when viewing the video on a computer. This option ignores interlacing. ● UPPER FIELD FIRST – Select this option (also called odd or field A) for video that will be viewed on a television. ● LOWER FIELD FIRST – Select this option (also called even or field B) for DV output or if UPPER FIELD FIRST produces jittery or shaky output or if your hardware manual specifies lower field first.

Item	Description
Pixel aspect ratio	Choose a setting from the drop-down list to change the of the file. This setting will depend on your capture/video output card. Consult your capture/video output card manual for the proper settings.
Alpha channel	Choose a setting from the drop-down list to change the information for the file. If the alpha channel in an image is not detected, choose the correct type of alpha channel from this drop-down list. If you're unsure, try the PREMULTIPLIED setting first. • UNDEFINED – Video provides no alpha channel information. This setting ignores any alpha channel information in the file. • NONE – Video has no alpha channel or there is an alpha channel but it's completely opaque (solid). • STRAIGHT (UNMATTED) – Transparency information is maintained in only the alpha channel. Alpha information must be applied to the RGB channels before compositing. • PREMULTIPLIED – The standard method of handling alpha information. Transparency information is maintained in the alpha and RGB channels, and the image is ready for compositing. No RGB component exceeds the alpha value. • PREMULTIPLIED (DIRTY) – Similar to PREMULTIPLIED, but RGB components may exceed the alpha. This setting is used mainly for images created by 3D applications involving compositing of 3D images over a non-solid color image background.
Color space	Choose the color space that the media is in. For more information, see Specifying the color space for individual shots

Item	Description
Color Range	Choose the color range of the selected media. VEGAS Pro detects the media's color range if the media supports color range metadata. Most reader plug-ins support the color range override option. **NOTE** If the color range is “limited” or “Undefined” in Y’CbCr format, 16-236 and 16-255 color ranges will be converted to 0-255 RGB (full range). If the color range is full, no level conversion is performed when decoding Y’CbCr format into RGB color space. **IMPORTANT** The color range override option is applicable only when you've set your Project Properties to full range mode. Currently, color range override is not supported in some reader plugins like MVC and WMV, or in still images readers.

Item	Description
Rotation	Choose a setting from the drop-down list to rotate a media file's orientation.  In this example, the video was shot with the camera tripod rotated 90 degrees. The project is rotated, but the media doesn't match the project orientation, so the video is letterboxed within the frame.  After choosing 90 CLOCKWISE° from the ROTATION drop-down list, the media is rotated, and the video fills the frame. **TIP** ● If you want to rotate a project's orientation, you can use the OUTPUT ROTATION drop-down list on the Video tab of the Project Properties dialog. For more information, see Setting project properties ● To rotate multiple files quickly, select them in the Project Media window, right-click a selected file, and then choose ROTATE 90 CLOCKWISE° or ROTATE 90 COUNTERCLOCKWISE° from the shortcut menu. ● For more information about working with rotated projects, see Creating rotated projects

Editing properties for multiple video files

Select two or more video files in the Project Media window and click the MEDIA PROPERTIES button ⚙ to display the Properties dialog.

The following settings can be edited for multiple video files:

- FRAME RATE (for still-image sequences)
- FIELD ORDER
- PIXEL ASPECT RATIO
- ALPHA CHANNEL and BACKGROUND COLOR
- COLOR SPACE
- ROTATION

If a setting is not the same for all selected video files, (DIFFERING VALUES) is displayed. If you do not change the setting, the differing values are kept.

Saving settings to video profiles for future auto-detection

If you frequently need to edit the settings for a type of video file, click the SAVE SETTINGS TO VIDEO PROFILES FOR FUTURE AUTO-DETECTION button 💾 after editing the settings on the Properties dialog.

The new settings are used whenever a file of that type is detected.

Inserting audio tracks

From the Insert menu, choose AUDIO TRACK to add a new, blank track at the end of the track list.

If you want to add a track in a specific location, right-click a track header and choose INSERT AUDIO TRACK from the shortcut menu. The new track will be inserted above the selected track.

NOTE When you drag a media file from the Explorer window or Project Media window to an area of the timeline that does not contain a track, a new track will be created and a new event containing the media file is added to the new track.

TIP You can change the default track volume, pan type, height, track effects, and record input monitor status by right-clicking a track and choosing SET DEFAULT TRACK PROPERTIES from the shortcut menu. For more information, see Setting default track properties

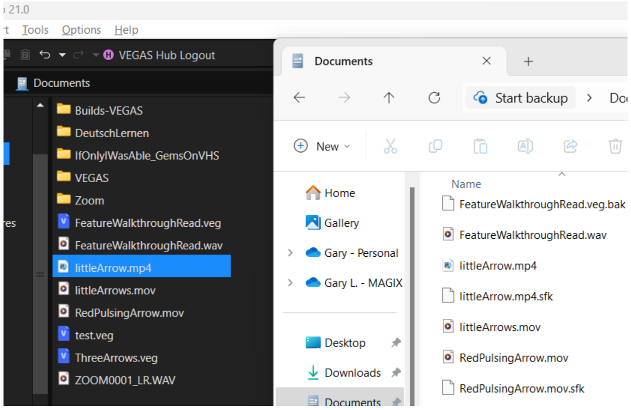
.sfk files

Sfk files store audio peak data that VEGAS Pro uses to draw audio waveforms and monitor audio peak levels for metering. These are permanent files which VEGAS Pro creates automatically when you add audio to your timeline (including the audio portion of a video file). Typically, they have a very small file size and don't take up much room on your hard drive.

An .sfk file has the identical name as the audio file from which it is created. They are created in the same folder on your computer drives that hold the audio you added. Once the .sfk file has been created, VEGAS Pro uses that information any time you add that same audio file to the same or a different project (as long as the .sfk file remains in the same folder that holds the audio file and has the identical name as the audio file). This saves time that is required to build these files after the first time you use that audio.

You can safely delete .sfk files at any time but be aware that if you do so and then add the corresponding audio file to a project, VEGAS Pro will have to take the time to recreate the .sfk file.

> **NOTE** Note that .sfk files are not shown in the VEGAS Pro Explorer window (and never have been). To see .sfk files, you need to use Windows Explorer to navigate to the folder that holds your audio. As you can see in the figure below, .sfk files are not shown for the files littlArrow.mp4 and RedPulsingArrow.mov in the VEGAS Pro Explorer window (on the left) but they are shown in Windows Explorer (on the right).


21.0
Tools
Options
Help
VEGAS Hub Logout
Documents
Builds-VEGAS
DeutschLernen
IfOnlyIWasAble_GemsOnVHS
VEGAS
Zoom
FeatureWalkthroughRead.veg
FeatureWalkthroughRead.wav
littleArrow.mp4
littleArrows.mov
RedPulsingArrow.mov
test.veg
ThreeArrows.veg
ZOOM0001_LR.WAV
Documents
Start backup
New
Home
Gallery
Gary - Personal
Gary L. - MAGIX
Desktop
Downloads
Documents
Name
FeatureWalkthroughRead.veg.bak
FeatureWalkthroughRead.wav
littleArrow.mp4
littleArrow.mp4.sfk
littleArrows.mov
RedPulsingArrow.mov
RedPulsingArrow.mov.sfk

Inserting video tracks

From the INSERT menu, choose VIDEO TRACK to add a new, blank track at the top of the track list.

If you want to add a track in a specific location, right-click a track header and choose INSERT VIDEO TRACK from the shortcut menu. The new track will be inserted above the selected track.

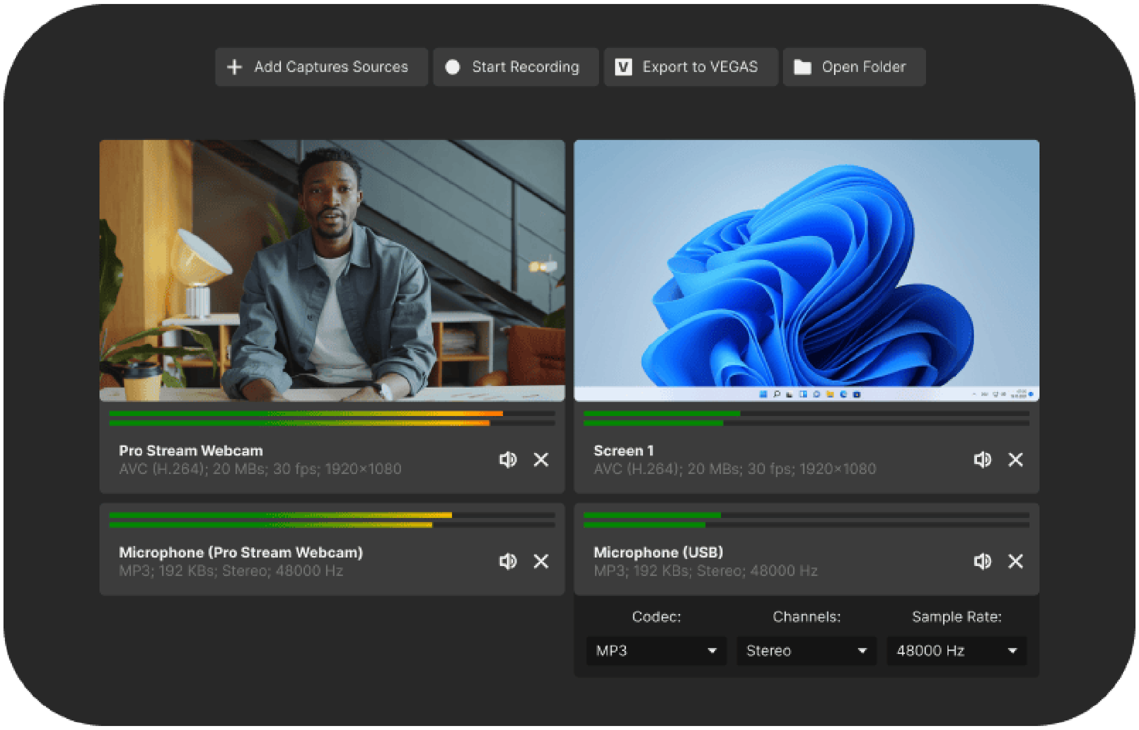
> **NOTE** When you drag a media file from the Explorer window or Project Media window to an area of the timeline that does not contain a track, a new track will be created and a new event containing the media file is added to the new track.

> **TIP** You can change the default compositing mode, height, and track effects by right-clicking a track and choosing SET DEFAULT TRACK PROPERTIES from the shortcut menu. For more information, see Setting default track properties

Screen Recording with VEGAS Capture

VEGAS CAPTURE is an integrated application that allows you to record video and audio sources from your computer. You can add multiple sources such as monitors, windows, webcams, or microphones, organize them by category, and configure the recording quality globally or per source.

> **USE CASES**
> - Tutorials and Presentations: Record a single application window with microphone narration.
> - Gameplay Recording: Capture your screen and webcam simultaneously for commentary.
> - Professional Multi-Source: Record multiple monitors and several audio inputs for complex projects.



Pro Stream Webcam
AVC (H.264); 20 MBs; 30 fps; 1920×1080

Screen 1
AVC (H.264); 20 MBs; 30 fps; 1920×1080

Microphone (Pro Stream Webcam)
MP3; 192 KBs; Stereo; 48000 Hz

Microphone (USB)
MP3; 192 KBs; Stereo; 48000 Hz

Codec:	Channels:	Sample Rate:
MP3	Stereo	48000 Hz

FIGURE *Main VEGAS Capture Window*

How to Record

PREREQUISITE

- Ensure that your operating system grants screen and audio recording permissions to VEGAS Capture.
- Verify that there is enough free disk space in your designated capture folder.

1. Open VEGAS CAPTURE from the FILE menu, or click the START VEGAS CAPTURE button in the PROJECT MEDIA window toolbar.

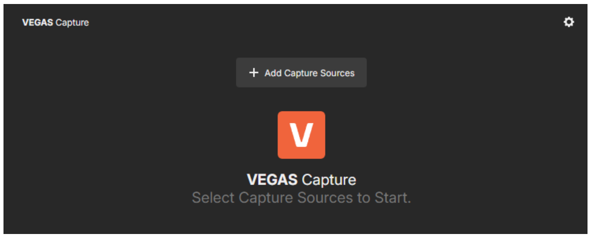

VEGAS Capture
+ Add Capture Sources
V
VEGAS Capture
Select Capture Sources to Start.

FIGURE *Start Screen — No Sources Added*

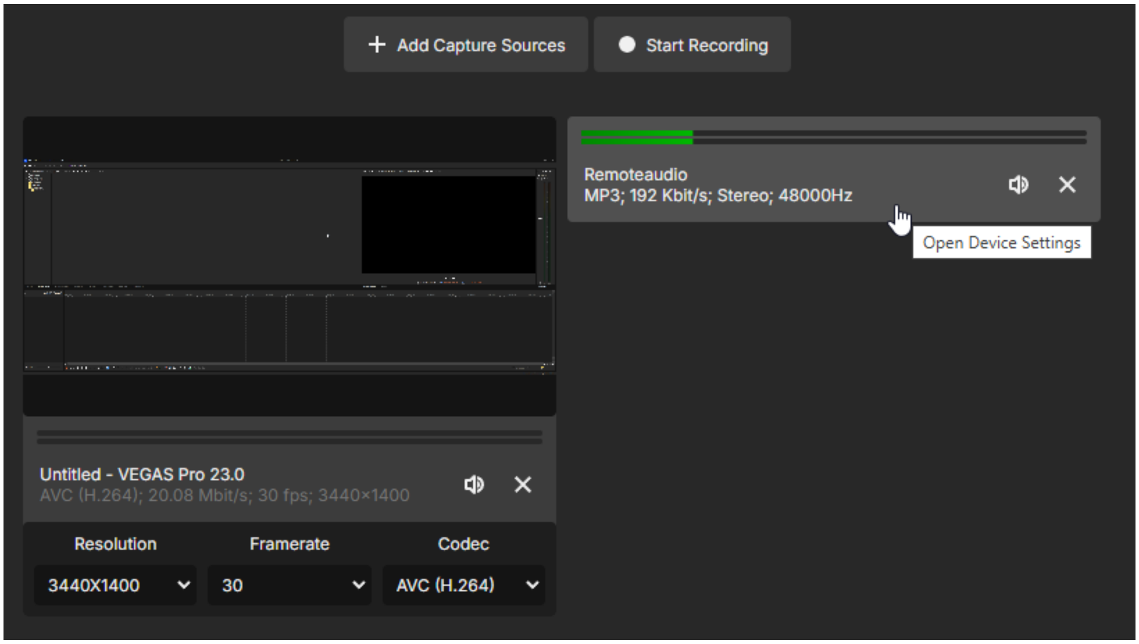
2. Click + ADD CAPTURE SOURCES to open the SELECT CAPTURE SOURCES dialog.
3. Choose a tab (VIDEO, AUDIO, SCREEN, or WINDOW) and click a tile to add that source.

> **TIP** You can select multiple sources before recording.

4. Manage sources on the dashboard. Each source appears as a card that shows availability and format info.

   Click OPEN DEVICE SETTINGS to configure the selected source.

   - VIDEO: set **Resolution**, **Framerate**, and **Codec** on the card.
   - AUDIO: set **Codec**, **Channels**, and **Sample Rate** on the card.
   - MUTE a source or click X to remove it from the capture list.


+ Add Capture Sources
● Start Recording
Open Device Settings

Remoteaudio
MP3; 192 Kbit/s; Stereo; 48000Hz

Untitled - VEGAS Pro 23.0
AVC (H.264); 20.08 Mbit/s; 30 fps; 3440×1400

Resolution	Framerate	Codec
3440X1400	30	AVC (H.264)

FIGURE *Device Settings*

5. After you add at least one source, the START RECORDING button becomes available.

   Click START RECORDING to begin.

6. While recording, the button changes to STOP and shows the elapsed time.

   Click STOP to finish.

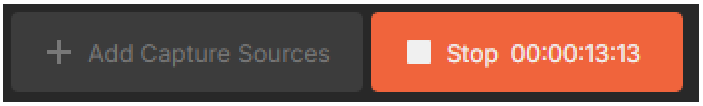

+ Add Capture Sources
Stop 00:00:13:13

FIGURE *Recording in Progress*

7. After you stop, two actions become available:

   - EXPORT TO VEGAS: Sends the captured media to VEGAS Pro and places each source on its own track in the timeline.
   - OPEN FOLDER: Opens the capture folder that contains your files (video/audio files, peak files, and an `export.json`).

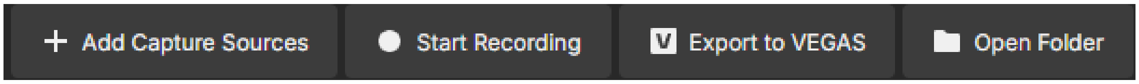

+ Add Capture Sources
Start Recording
Export to VEGAS
Open Folder

FIGURE *Post-Recording Actions*

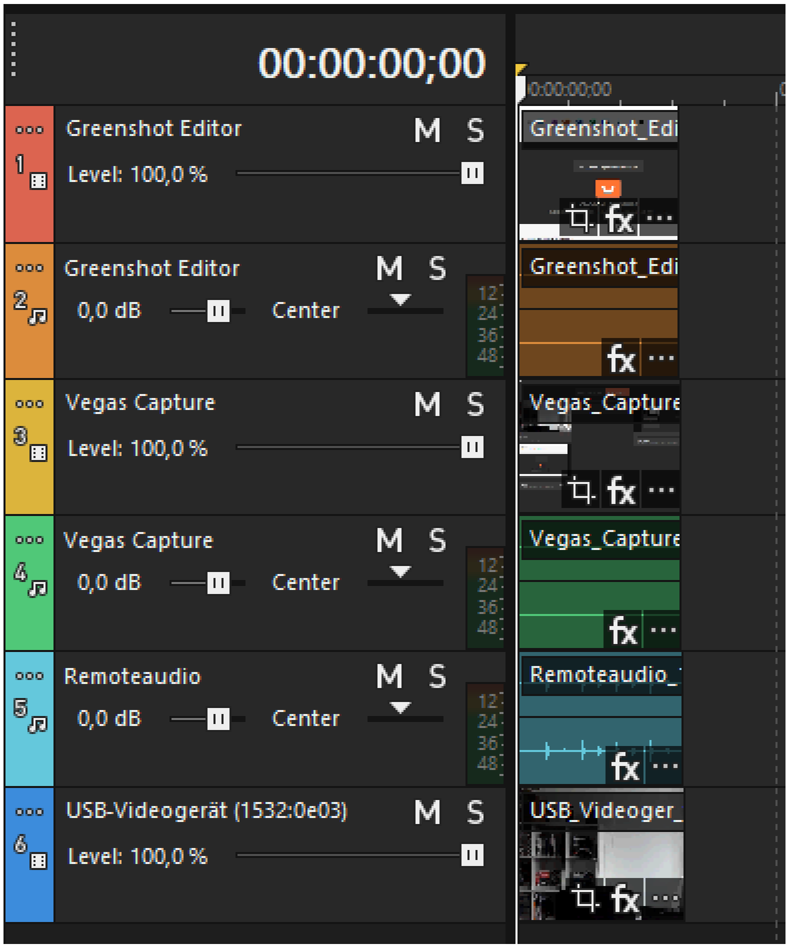
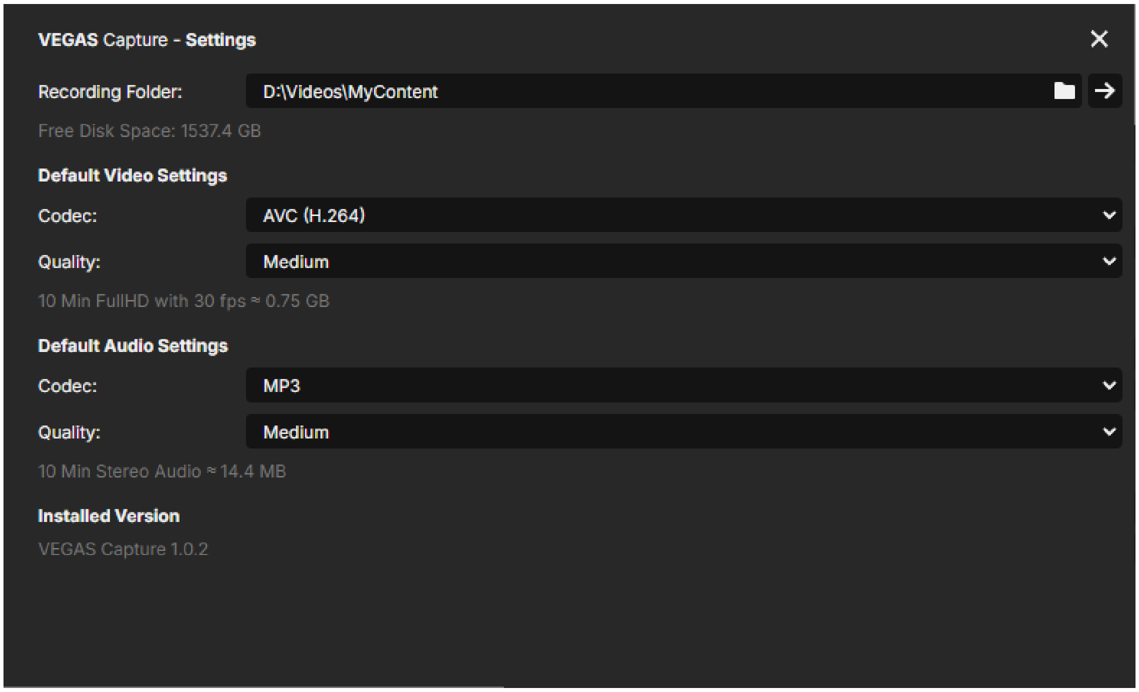

00:00:00;00
Greenshot Editor
Level: 100,0 %
M S
Greenshot Editor
0,0 dB
Center
M S
Vegas Capture
Level: 100,0 %
M S
Vegas Capture
0,0 dB
Center
M S
Remoteaudio
0,0 dB
Center
M S
USB-Videogerät (1532:0e03)
Level: 100,0 %
M S
Greenshot_Edi
Greenshot_Edi
Vegas_Capture
Vegas_Capture
Remoteaudio_
USB_Videoger_

FIGURE *Exported to VEGAS — One Track per Source*

IMPORTANT

Warning: If you do not add at least one source, nothing will be recorded.

Settings



VEGAS Capture - Settings

Recording Folder: D:\Videos\MyContent

Free Disk Space: 1537.4 GB

Default Video Settings

Codec: AVC (H.264)

Quality: Medium

10 Min FullHD with 30 fps ≈ 0.75 GB

Default Audio Settings

Codec: MP3

Quality: Medium

10 Min Stereo Audio ≈ 14.4 MB

Installed Version

VEGAS Capture 1.0.2

FIGURE *Settings Overview*

VEGAS Capture — Settings

1	Recording Folder	Choose where captured media is stored. The dialog shows **Free Disk Space** for the selected location.
2	Default Video Settings	Set **Codec** and **Quality** for new video sources. An info line estimates file size (for example, “10 min FullHD at 30 fps ≈ 0.75 GB”).
3	Default Audio Settings	Set **Codec** and **Quality** for new audio sources. An info line estimates file size (for example, “10 min stereo audio ≈ 14.4 MB”).
4	Installed Version	Displays the currently installed VEGAS Capture version.

Converting video to 24p

If you want to create a 24 fps, progressive-scan project using existing interlaced video, you're in luck: VEGAS Pro makes easy work of converting your existing footage.

> **TIP**
> If you are shooting interlaced video that you plan to convert to 24p, your camera's shutter speed will determine the quality of frame rate conversion in VEGAS Pro:
>
> - If you're shooting NTSC or HDV 60i video, set your shutter speed to 1/60 second.
> - If you're shooting PAL or HDV 50i video, set your shutter speed to 1/50 second.
>
> These settings will provide the smoothest-looking motion possible after conversion. Faster frame rates can produce visibly choppy motion.

1. Start a new project. For more information, see [Creating a new project]()
2. Set your project properties:
    a. From the File menu, choose PROPERTIES. The Project Properties dialog is displayed.
    b. From the TEMPLATE drop-down list, choose NTSC DV 24P.
    c. Click OK to close the Project Properties dialog and apply your changes.
3. Add the video to the timeline. For more information, see [Adding media files to your project]()
4. From the File menu, choose RENDER AS.
5. Render the file using the NTSC DV 24P (INSERTING 2-3-3-2 PULLDOWN) AVI template. This template allows for more efficient pulldown removal. For more information, see [Rendering your project]()

Working with cameras

Working with RED camera clips

RED ONE®, EPIC®, SCARLET®, and WEAPON® cameras record 4K footage as REDCODE™ RAW (.r3d) files that you can add directly to the VEGAS® Pro timeline and edit like any other supported media type.

Using RED camera clips in a VEGAS Pro project

1. Use the Device Explorer to browse and import clips from your RED camera's memory card or hard drive to your local hard drive.

   ⓘ For more information, see Using the Device Explorer

2. Set your project properties to match the format of your final output:

   ⓘ For more information, see Setting project properties

   - To output a 4K still image sequence, use the 4K 16:9 24P (4096X2304, 23.976 FPS) template.
   - To output a 2K still image sequence, use the 2K 16:9 24P (2048X1152, 23.976 FPS) template.
   - To output to Blu-ray Disc™, use the HD 1080-24P (1920X1080, 23.976 FPS) template.

3. Drag the clips from the Explorer or Project Media window to the timeline to create events.

   > **NOTE** RED cameras create new "rollover" files for each clip each time a file reaches 2 GB on disk. For example, a 10-minute clip recorded in 4K will be approximately 20 GB on disk, divided among 10 .r3d files. You can drag any one of these files to the timeline to place the entire clip on the timeline.

4. Edit your project as needed.

For more information, see Editing events on the timeline

5. Render your project for your destination format.

Modifying R3D decode properties

You can modify the decode properties of your RED camera files in the R3D Decode Properties window. These settings are applied nondestructively to the raw .r3d file as metadata.

To access this window for one or more .r3d files, select the files in the Project Media window, right-click them, and choose FILE FORMAT PROPERTIES from the shortcut menu.

> **IMPORTANT** The decode properties are stored in a .SfDecProp file that is saved using the same base name as the clip. Do not edit the contents of this file.

Modifying properties for multiple files

- When multiple files are selected, check boxes appear for slider settings that do not match across all selected files. When you drag the slider or type a new value, the checkbox is automatically selected, and the new value is applied to all selected files when you click OK. Clear the checkbox to leave the setting unchanged for the selected files.
- If values already match for a slider setting, no checkbox is displayed, and any changes made to the setting are applied to all selected files.
- If values do not match for a drop-down setting, the setting is blank. If you choose a value for a blank drop-down setting, that value is applied to all selected files.

Restoring default values

- Double-click a slider to restore the setting to the clip default.
- Click the CLIP DEFAULT button to restore all settings to the clip default.
- Click the FACTORY DEFAULT button to restore all settings to the default settings of the camera.

For more information about the settings in the R3D Decode Properties window, refer to your RED ONE camera documentation or http://www.red.com/support. These settings map directly to settings on the RED cameras.

Working with AVCHD video

You can edit files recorded with AVCHD camcorders just like any other supported media type on the timeline.

The following steps will guide you through the process of using AVCHD video in your VEGAS® Pro project.

> **NOTE** 5.1-channel audio will be downmixed to stereo when importing into a stereo project. When importing into a 5.1 surround project, audio will be added to separate tracks for the center, front, rear, and LFE channels.

1. Shoot your video with an AVCHD camcorder.
2. Start a new VEGAS Pro project, and set your project properties to the format that most closely matches your desired output format.

   For example, if you intend to burn the video to an NTSC DVD, choose NTSC DV (720X480, 29.970 FPS) from the TEMPLATE drop-down list on the Video tab of the PROJECT PROPERTIES dialog. If you want to create a 4.8 Mbps high-definition Windows Media Video file, choose HDV 720-24P (1280X720, 23.976 FPS).

   For more information, see Setting project properties
3. Import your AVCHD files.

   For more information, see Using the Device Explorer
4. Drag your clips from the Project Media window to the timeline to create events.
5. Edit your project as needed.

> **TIP**
>
> If you're working on a system with limitedprocessing power, converting to a lower-resolution format will streamlinethe editing process and allow you to preview your project with higherframe rates. This process is called proxy editing.
>
> For more information, see Creating proxy files for high-definition editing

6. Render your project to any supported rendering format.

If you want to render to AVCHD format and export the rendered file to an AVCHD camera, please use the following steps:

1. Verify that your VEGAS Pro project is set to 5.1 surround mode.

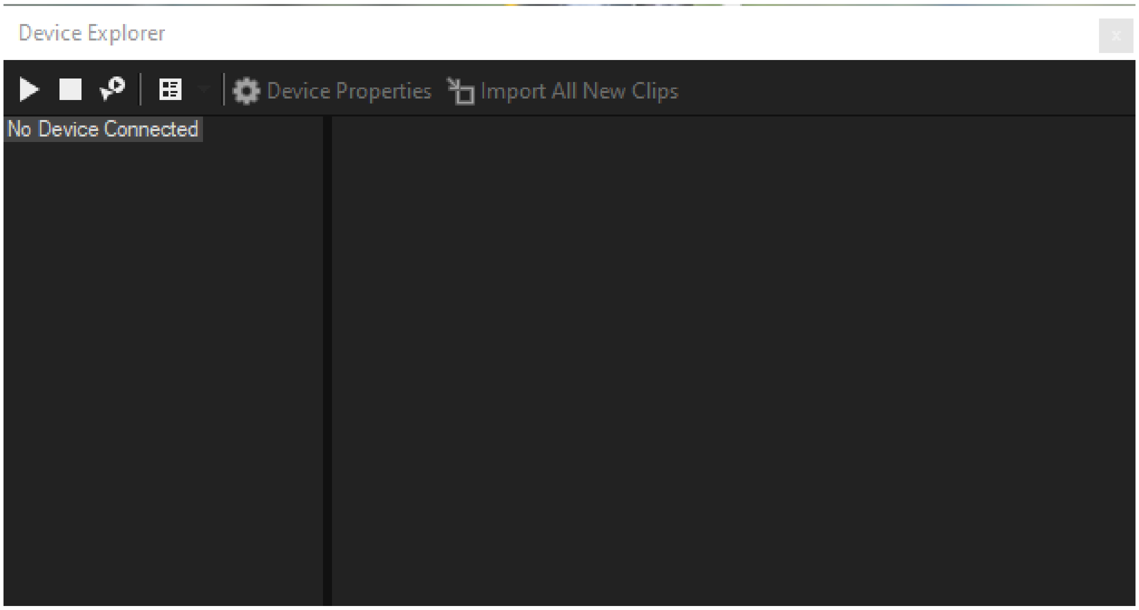
   For more information, see 5.1 surround projects
2. From the File menu, choose RENDER AS.
3. In the Render As dialog, choose SONY AVC/MVC in the FORMATS box.
4. Use one of the following templates:
   - AVCHD 1440x1080 NTSC 5.1 Surround
   - AVCHD 1920x1080 NTSC 5.1 Surround
   - AVCHD 1440x1080 PAL 5.1 Surround
   - AVCHD 1920x1080 PAL 5.1 Surround
5. If you choose to use the Custom Template dialog to customize your rendering template, leave all settings at their default values except for the BIT RATE control. The default BIT RATE setting should work for most applications.
6. To save the rendered file to your camera, you'll need to use the software that was supplied with your camera.

Using the Device Explorer

The Device Explorer allows you to browse and import clips from AVCHD, XDCAM EX, NXCAM, XAVC, XAVC S, Panasonic P2, and RED ONE/EPIC/SCARLET/WEAPON devices; CompactFlash-based memory recording units such as the HVR-MRC1; and hard-disk-based recording units such as the HVR-DR60.

For more information, see Working with AVCHD videoand Working with RED camera clips

1. Choose VIEW | WINDOW | DEVICE EXPLORER. The Device Explorer window is displayed.
2. Connect your camera to a USB port on your computer. The camera is displayed on the left side of the Device Explorer window.
3. Select your camera on the left side of the Device Explorer window. The camera's clips are displayed on the right side of the window, and clips that have not yet been imported are indicated with a yellow icon ●.



> **TIP**
>
> - If you want to use clips from a folder on your computer, right-click the left pane of the Device Explorer window and choose BROWSE from the shortcut menu.
> - In order for some devices to appear in the Device Explorer window, you may need to change the device's USB Connect setting from AUTOMATIC or MTP to MASS STORAGE.

Previewing clips

Select your camera on the left side of the Device Explorer window. The camera's clips are displayed on the right side of the window, and clips that have not yet been imported are indicated with a yellow icon ●.

If the AUTO PREVIEW button is selected, you can click a clip in the Device Explorer to audition it. You can stop the preview by clicking the STOP PREVIEW button ■, or you can turn off the preview feature by deselecting the AUTO PREVIEW button.

> **TIP** Video is previewed in the Trimmer window. If you want to preview in the Video Preview window, right-click the Trimmer window and deselect the SHOW VIDEO MONITOR command.ℹ For more information, see Using the Trimmer

When the AUTO PREVIEW button is not selected, click the START PREVIEW button ▶ to start preview.

Choosing the folder where you want to import clips

1. Select your camera on the left side of the Device Explorer window and click the DEVICE PROPERTIES button ⚙.

   The Device Properties dialog is displayed, and the CAPTURE FOLDER box displays the path to the folder where imported clips will be saved.

2. Click the BROWSE button to display the Capture Folders dialog. This dialog lists the available folders for saving your imported video:
   - Select a folder's checkbox to save your imported video in that folder.
   - Click the ADD FOLDER button and browse to a folder to add a new folder.
   - Select a folder in the list and click the REMOVE FOLDER button ✕ to remove it from the list.

Importing clips

1. Select your camera on the left side of the Device Explorer window. The camera's clips are displayed on the right side of the window, and clips that have not yet been imported are indicated with a yellow icon ●.
2. Click the IMPORT ALL NEW CLIPSbutton to import clips to the Project Media window:
   - If clips are selected in the Device Explorer window, only the selected clips are imported (you can hold `Ctrl` while clicking to select multiple clips).
   - If no clips are selected in the Device Explorer window, all new clips are imported.

   > **TIP** Right-click a clip in the Device Explorer window and choose OPEN IN TRIMMER or IMPORT AND ADD TO PROJECT to choose how you want to import clips.

3. You can then use the Project Media window to organize your clips and add the imported video to your project just like any other media file. For more information, see Adding media files to your project

   For more information, see Working with AVCHD videoand Working with RED camera clips

> **NOTE** 5.1-channel audio will be downmixed to stereo when importing into a stereo project. When importing into a 5.1 surround project, audio will be added to separate tracks for the center, front, rear, and LFE channels.

> **TIP** You can also drag a clip from the Device Explorer directly to the Project Media window, Trimmer, or timeline. VEGAS Pro begins importing the clip when you release the mouse, and an event is created on the timeline when importing is finished.

Importing video from a DVD camcorder

From the File menu, choose IMPORT, and then choose DVD CAMCORDER DISC from the submenu to import video from a finalized Sony DVD Handycam® camcorder disc.

> **NOTE**
> - Before importing video, you'll need to finalize the disc. For information about finalizing a disc, please refer to your camcorder's documentation.
> - 5.1-channel audio will be downmixed to stereo when importing into a stereo project. When importing into a 5.1 surround project, audio will be added to separate tracks for the center, front, rear, and LFE channels.

1. Place the DVD you want to import in your computer's DVD drive or connect your camcorder to your computer via USB.

   > **IMPORTANT** The Sony Handycam USB driver that is included with DVD-based camcorders can prevent VEGAS Pro from recognizing a USB-connected camera. If you use the Add/Remove Programs Control Panel to uninstall the "Sony DVD Handycam USB driver" component, VEGAS Pro will be able connect to the camera and import video.

2. From the File menu, choose IMPORT, and then choose DVD CAMCORDER DISC from the submenu. The Import DVD Camcorder Disc dialog is displayed.
3. From the SOURCE drop-down list, choose the disc that contains the video you want to import.

4. The DESTINATION box displays the folder where the video will be imported. The folder name is based on the disc's volume label.

   Click the BROWSE button if you want to choose a different folder.

5. Click the OK button to start importing video.

   After importing is complete, the video from the disc is added to the Project Media window. Each chapter is imported as a separate file.

   You can then add the imported video to your project just like any other media file.

   For more information, see Adding media files to your project

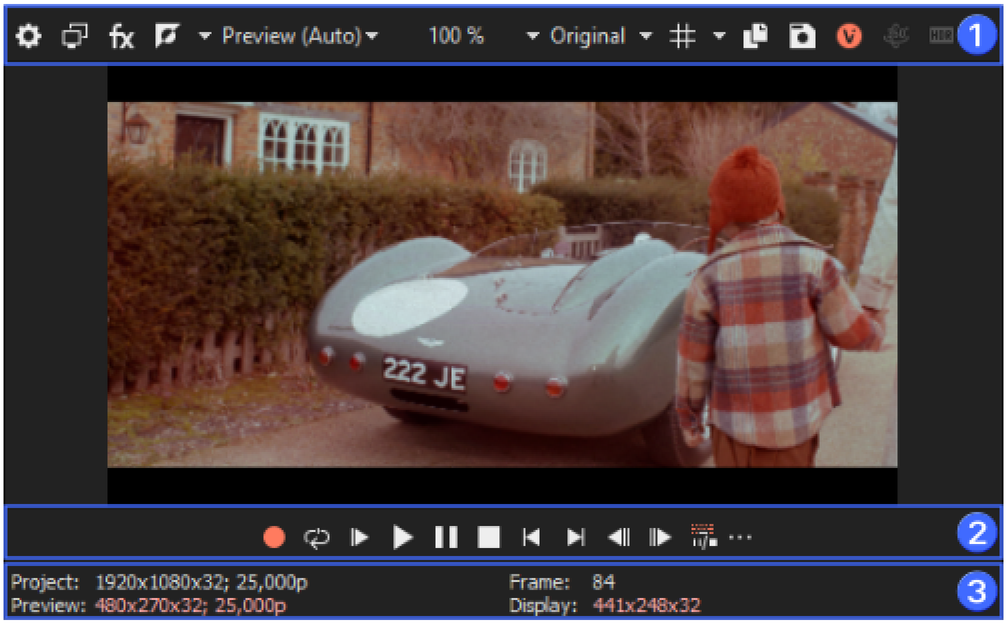
Previewing your project

VEGAS® Pro provides two options for previewing your project: you can play back in the VEGAS Pro window or prerender selected video frames for playback within the VEGAS Pro window.

Using the Video Preview window

From the View menu, choose VIDEO PREVIEW to toggle the display of the Video Preview window.

The Video Preview window displays a project's video output at the current cursor position during editing and playback. The playback includes any effects that you have applied to it. This window is also useful when editing frame by frame for synchronizing audio. Right-click anywhere in the window to display a shortcut menu with Video Preview window options.



Project: 1920x1080x32; 25,000p
Preview: 480x270x32; 25,000p
Frame: 84
Display: 441x248x32

1	Toolbar
2	Transport Bar
3	Status Bar

Editing video properties for your project

Click the PROJECT VIDEO PROPERTIES button to display the Video tab in the Project Properties dialog. Use this tab to adjust the video format of your project.

For more information, see Setting project properties

TIP

- Select the USE PROJECT OUTPUT ROTATION SETTING checkbox on the PREVIEW DEVICE tab of the PREFERENCES dialog if you're rendering a rotated project and want to use the OUTPUT ROTATION setting from the Project Properties dialog for previewing your project.

  When the checkbox is cleared, the media is rotated according to its Media Properties setting, but the Video Preview output is unrotated—you can use this setting to proof your project on an unrotated display.

  For more information, see Creating rotated projects and Preview Device Tab

Previewing on an external monitor

Click the VIDEO PREVIEW ON EXTERNAL MONITOR button to send your video output to the device specified on the Preview Device tab of the Preferences dialog.

If you have not specified a device, the Preview Device tab will be displayed when you click the VIDEO PREVIEW ON EXTERNAL MONITOR button.

> **TIP** Video is sent to the external monitor and the Video Preview window at the same time. If you experience dropped frames, try clearing the DISPLAY FRAMES IN VIDEO PREVIEW WINDOW DURING PLAYBACK checkbox on the Preview Device tab of the Preferences dialog.

For more information, see Using an External Video Monitor and Preview Device Tab

Adding or bypassing video effects

Click the VIDEO OUTPUT FX button to apply an effect to every video event in your project.

You can use the SPLIT-SCREEN VIEW button in the Video Preview window to create a split-screen preview that bypasses all video effects (track effects, event effects, media effects, and video output effects) without removing them from your project.

For more information, see Adding video effects or Split-screen previews

You can right-click the button and choose a command from the shortcut menu to enable, bypass, or delete effects.

For more information about using video effects, see Adding video effects

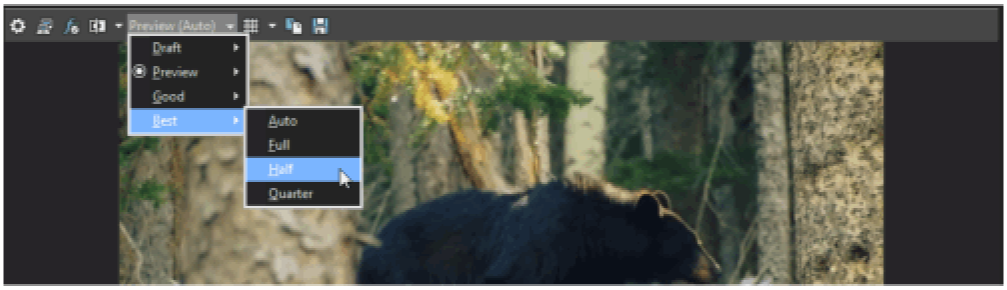
Adjusting the preview quality and resolution

Click the PREVIEW QUALITY button and choose a setting from the menu to change the quality and resolution for rendering your video preview.

This setting is used for previewing only and has no effect on the final rendered video. Decreasing the preview resolution can allow the VEGAS Pro Video Preview window to display a higher frame rate, especially for complex projects that contain overlays, transitions, and effects.

The AUTO setting will adjust the frame size to fit the Video Preview window size. The FULL setting processes frames at the project frame size. The HALF setting processes frames at half the project frame size. The QUARTER setting processes frames at one-quarter of the project's frame size. For example, if you have an NTSC (720x480) project, HALF creates a 360x240 preview; QUARTER creates a 180x120 preview.

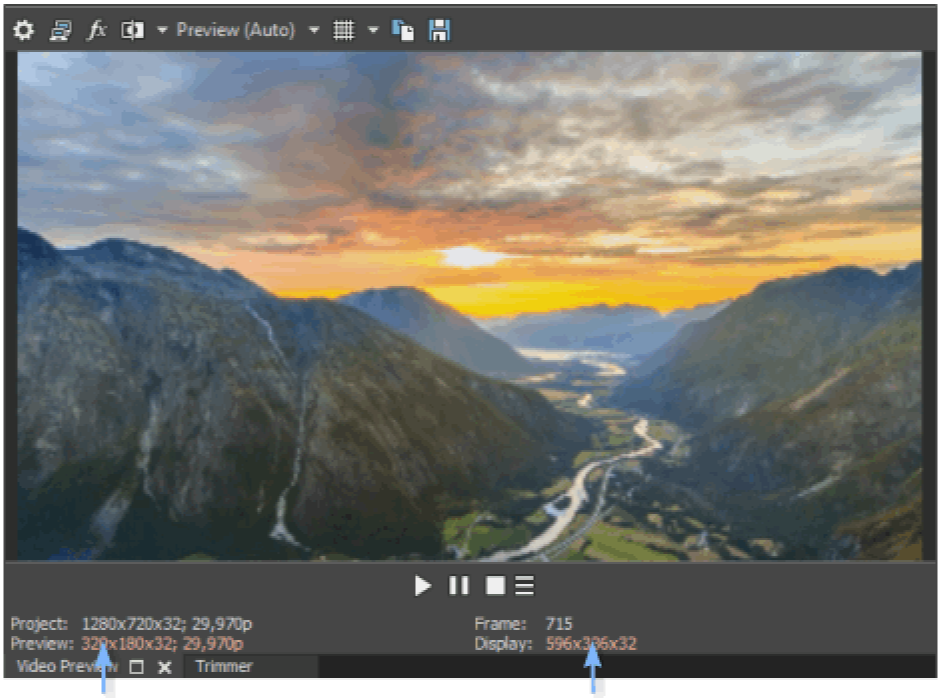
> **TIP** Choosing a QUARTER or HALF setting can improve playback performance, especially when previewing high-definition source material.



If you want to display square pixels in the Video Preview window even if the PIXEL ASPECT RATIO setting in the Project Properties dialog is using nonsquare pixels (DV), right-click the display and choose SIMULATE DEVICE ASPECT RATIO from the shortcut menu.

If you want the preview to fill the Video Preview window, right-click the display and choose SCALE TO FIT PREVIEW WINDOW from the shortcut menu.

> **TIP**
>
> - If you want to emphasize frame rate during preview, right-click the Video Preview window and select ADJUST SIZE AND QUALITY FOR OPTIMAL PLAYBACK. When the command is not selected, video quality is emphasized, and the frame rate will be reduced if necessary.
> - Try setting the preview quality to PREVIEW | FULL and enabling SCALE TO FIT PREVIEW WINDOW.


Preview (Auto)
Video Preview
Trimmer
Preview Quality Setting
Current Preview Size and Frame Rate

Project: 1280x720x32; 29,970p
Preview: 320x180x32; 29,970p
Frame: 715
Display: 596x336x32

Item	Description
Preview	The PREVIEW indicator in the Video Preview window represents the setting of the VIDEO PREVIEW QUALITY button.
Display	The DISPLAY indicator represents the current playback properties. If you're using an AUTO setting for preview quality, this indicator will represent the scaled frame size. If your video preview is dropping frames, you'll see the actual frame rate in this section.

Using Video Preview overlays (safe areas, grid, closed captions, and color channel isolation)

Click the down arrow next to the OVERLAYS button ▦ and choose a setting from the menu to configure the display of the Video Preview menu.

Click the OVERLAYS button to toggle between a standard preview and the selected preview mode.

> **TIP** Overlay settings from the Video Preview window are also applied to the video monitor in the Trimmer window.

Preview Mode	Description
Grid	Choose GRID to display vertical and horizontal lines over your video. You can use the grid to help you align objects. Set the grid spacing using the HORIZONTAL GRID DIVISIONS and VERTICAL GRID DIVISIONS settings on the Video tab in the Preferences dialog.
Safe Areas	The Video Preview window displays the entire video frame, although most television monitors will not display all of this data. Choose SAFE AREAS to display borders around your video to represent the visible areas for action and titles. The outer border marks the area that will be visible on a television screen, and the inner border is the suggested area for titles. After verifying that your action and titles are within the safe areas, however, you should test your project on the destination television monitor. Set the grid spacing using the ACTION SAFE AREA and TITLE SAFE AREA settings on the Video tab in the Preferences dialog.
Closed Captioning CC1/2/3/4	If you're working with a video that contains closed captions, you can preview your captions by using overlays in the Video Preview window. Select CC1, CC2, CC3, or CC4 to turn on the caption type that you want to preview. For more information, see Adding closed captioning to video files
Color Channel Isolation	Choose a color channel to select the specific channel to be isolated and whether the channel should be displayed in grayscale only. **TIP** Use the ALPHA AS GRAYSCALE setting to isolate the Alpha channel mask and display it in grayscale.

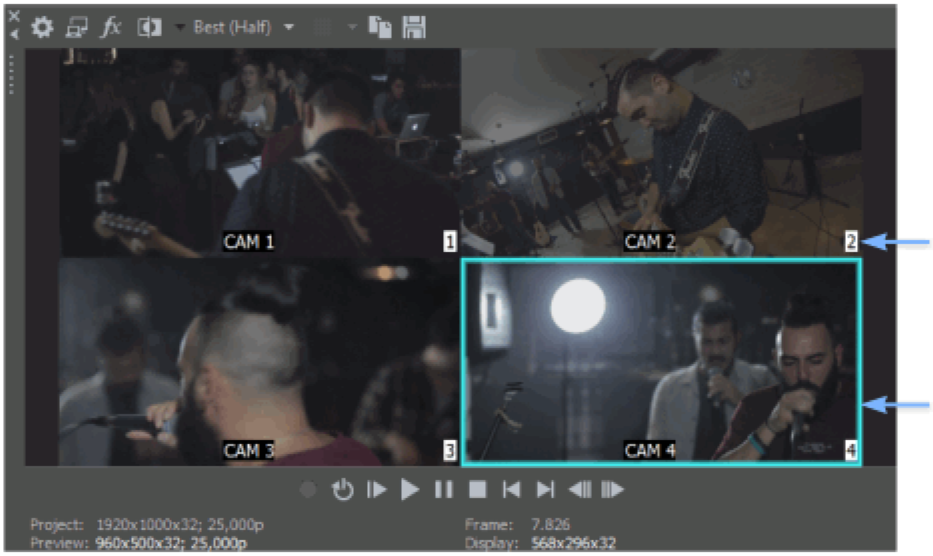
Preview Mode	Description
360° mode	Switches the Preview window into a special 360° mode to interactively set the perspective when working with 360° video. For more information, see The Video Preview window in 360° mode.

Toggling multicamera editing mode

From the Tools menu, choose MULTICAMERA, and then choose ENABLE MULTICAMERA EDITING to enable multicamera editing mode.

In multicamera editing mode, the Video Preview window switches into multicamera mode, with a multicamera tiled view showing the contents of all takes simultaneously. The active take is highlighted with a colored border.

For more information, see Editing multicamera video



Project: 1920x1000x32; 25,000p
Preview: 960x500x32; 25,000p
Frame: 7.826
Display: 568x296x32

Camera or take name and number is displayed by default

The active take is highlighted

> **TIP** When multicamera editing mode is active, video envelopes, effects, and motion are bypassed in the Video Preview window to preserve your playback frame rate.

Copying the current frame to the clipboard

Click the COPY SNAPSHOT TO CLIPBOARD button to copy the current frame to the clipboard.

You can change the size of the image using the PREVIEW QUALITY button: choose AUTO or FULL to capture the frame at its full resolution, or choose HALF or QUARTER to capture a smaller image.

Saving the current frame as a file

Click the SAVE SNAPSHOT TO FILE button to save the current frame as an image file.

You can change the size of the image using the PREVIEW QUALITY button: choose AUTO or FULL to capture the frame at its full resolution, or choose HALF or QUARTER to capture a smaller image.

The Save Snapshot to File dialog is displayed to allow you to choose the format and location where you want to save the file. The file is automatically added to the Project Media window.

Mute All Audio or Video

- From the Options menu, choose MUTE ALL AUDIO to exclude all audio tracks from playback.
- From the Options menu, choose MUTE ALL VIDEO to exclude all video tracks from playback.

View or hide the status bar

Right-click the Video Preview window and choose SHOW STATUS BAR to toggle the display of the status bar at the bottom of the window.

Command	Description
Project	Displays the frame size, color bit depth, and frame rate from the Video tab in the Project Properties dialog. For more information, see Setting project properties
Preview	Displays the frame size, color bit depth, and frame rate that will be used for previewing. Right-click the Video Preview window and select DISPLAY AT PROJECT SIZE if you want to preview only using the project settings.
Frame	Displays the number of the current frame.
Display	Displays the current frame size, color bit depth, and frame rate of your preview. If you are unable to preview at the full frame rate, decrease the VIDEO PREVIEW QUALITY setting or use dynamic RAM previews. For more information, see Using dynamic RAM previews

Viewing or hiding the transport bar

Right-click the Video Preview window and choose SHOW TRANSPORT BAR to toggle the display of the transport bar at the bottom of the window.

Button		Description
●	Record	This button starts recording on all armed tracks. If no tracks are armed, a new track will be created automatically. For more information, see [Recording audio](#)
🔁	Loop Playback	Plays only the events in the loop region in a continuous mode.
⏵	Play from Start	Starts playback from the beginning of the project regardless of the current cursor position. When you stop playback, the cursor returns to its original position.
▶	Play	Starts playback from the cursor position.
⏸	Pause	Pauses playback and leaves the cursor at its current position.
■	Stop	Stops playback or recording and returns the cursor to its starting position.
⏮	Go to Start	Moves the cursor to the beginning of the project.
⏭	Go to End	Moves the cursor to the end of the project.
◀	Previous Frame	Moves the cursor one frame to the left. **TIP** Click and hold the PREVIOUS FRAME and NEXT FRAME buttons to move the cursor multiple frames.
▶	Next Frame	Moves the cursor one frame to the right.

Button	Description
Spacebar Switch	Select the button if you want the F12 and spacebar keyboard shortcuts to toggle between Play and Pause mode. In this mode, the Pause command ends project playback, but leaves the timeline cursor at the location it is at when you pause playback. In its default configuration, the Spacebar initiates project playback if it is not playing and stops playback if it is already playing. The Stop command ends project playback and returns the timeline cursor to the point it started at when you played the project.

Play/Stop	Play/Pause

> **TIP**
>
> To access additional buttons click the More button ⋯ and click the button you wish to access.
>
> To add a button to the Transport Toolbar:
>
> 1. Click the More button.
> 2. Click EDIT VISIBLE BUTTON SET.
> 3. Check the box next to the button to you would like to add, and click OK.
>
>   The button will now be visible each time you open the application.
>
> To remove a button from the Toolbar:
>
> 1. Click the More button.
> 2. Click EDIT VISIBLE BUTTON SET.
> 3. Uncheck the box next to the button to you would like to remove, and click OK.

Split-screen previews

Click the SPLIT-SCREEN VIEW button in the Video Preview window to turn split-screen previews on or off.

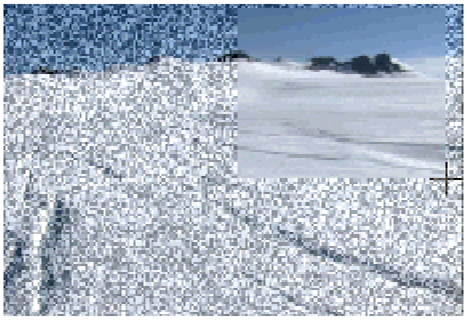
Split-screen previews allow you to split the Video Preview window so you can see your affected and unaffected video or your video and the contents of the clipboard at the same time. Use split-screen previews to fine-tune video effects or to match colors for color correction.

> **TIP** You can use split-screen previews to help match colors between clips. When the split-screen preview mode is set to CLIPBOARD, the Video Preview and Video Scopes windows will display the frame you copied to the clipboard and the current frame. For more information, see Monitoring video with scopes

NOTE The Video Preview window temporarily enters split-screen preview mode when you perform one of the following edits: event slip, event slip-trim, event slide, or cross-fade/transition slide. This temporary split-screen mode allows you to see the event's first and last frame as you trim. You can toggle this preview mode by selecting or deselecting the VIDEO EVENT EDGE FRAMES command on the View menu. ⓘ For more information, see Adjusting an event's length and Slipping and sliding events

Showing affected and unprocessed video

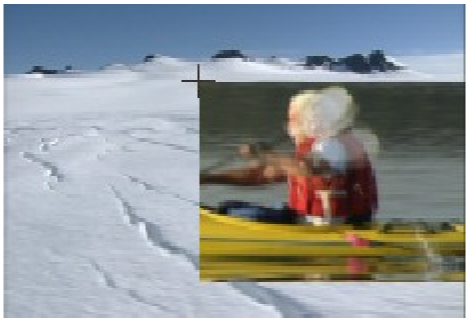
1. Click the down arrow ▾ next to the SPLIT-SCREEN VIEW button ◫ and choose FX BYPASSED from the menu.
2. Select the SPLIT-SCREEN VIEW button ◫. The cursor is displayed as a +.
3. Choose a preset selection or drag in the Video Preview section to create a selection. This selection will display the unprocessed video. In the following example, the Add Noise plug-in was applied to the event, and the selection displays the original video.



TIP Double-click in the Video Preview window to select the full window, or drag again to replace the existing selection.

Showing the video at the cursor position and the contents of the clipboard

1. Position the cursor on the timeline and click the COPY SNAPSHOT button in the Video Preview window to copy a frame to the clipboard.
2. Position the cursor at another point on the timeline.
3. Click the down arrow ▾ next to the SPLIT-SCREEN VIEW button and choose CLIPBOARD from the menu.
4. Select the SPLIT-SCREEN VIEW button.
5. Choose a preset selection or drag in the Video Preview section to create a selection. This selection will display the contents of the clipboard. In the following example, the snowscape is the current cursor position, and the kayak paddler was copied to the clipboard.



> **TIP** Double-click in the Video Preview window to select the full window, or drag again to replace the existing selection.

Changing the selection for displaying split-screen previews

Click the down arrow next to the SPLIT-SCREEN VIEW button and choose SELECT RIGHT HALF, SELECT LEFT HALF, or SELECT ALL to indicate which portion of the Video Preview Window you want to use to display unprocessed video or the contents of the clipboard.

When the SPLIT-SCREEN VIEW button is selected, the cursor is displayed as a +. Drag a rectangle in the Video Preview window to create a custom selection.

Retaining the split-screen preview settings

The Split-Screen View setting in the preview window is not persisted between launches of VEGAS Pro by default.

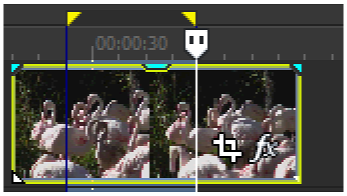
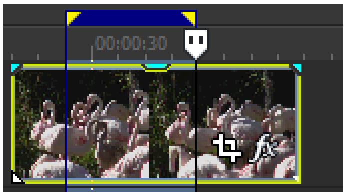
If you would like to persist this setting for further sessions,click the down arrow ▾ next to the SPLIT-SCREEN VIEW button and choose RETAIN SPLIT SCREEN SETTING from the menu.

Loop Playback

From the Options menu, choose LOOP PLAYBACK to repeatedly play back a section of your project.

1. Drag the cursor to make a timeline selection (or hold down the Shift key and use the arrow keys to make the selection).
2. From the Options menu, choose LOOP PLAYBACK, or click the LOOP PLAYBACK button.

   When Loop Playback is off, the loop region is gray. When Loop Playback is on, the loop region is blue.

	
Loop Playback = Off	Loop Playback = On

3. Click the PLAY button ▶ to hear your selection looped.

Using dynamic RAM previews

When your project includes compositing and complex video effects, you may not be able to preview your project at its full frame rate.

If you prefer not to prerender your project, you can dedicate a portion of your RAM to cache video frames that cannot be rendered in real time.

Setting up your cache

1. From the Options menu, choose PREFERENCES and select the VIDEO tab.
2. Enter a value in the DYNAMIC RAM PREVIEW (MAX) box to set the amount of RAM that you want to dedicate to video previews.

   > **NOTE** The maximum size of the RAM cache is displayed to the right of the control. If you reserve excessive amounts of RAM for your RAM cache, performance may decrease.

3. Click OK.

Building the preview from a selection

1. Select the region that contains the frames you want to cache.
2. From the Tools menu, choose BUILD DYNAMIC RAM PREVIEW (or press Shift+B). Each frame in the selection is rendered.

   > **NOTE** Click anywhere in the timeline to cancel.

3. After rendering is finished, click PLAY ▶. The cached video will play back at the frame rate specified on the Video tab of the Project Properties dialog.

   > **NOTE** If your RAM cache is not large enough to contain the entire selection, the selection is automatically adjusted to include only the cached region. You can increase the DYNAMIC RAM PREVIEW MAX setting on the Video tab of the Preferences dialog to increase the size of the cache.

Clearing dynamic RAM preview

During the course of your work in a project, you may have a significant amount of system RAM devoted to the Dynamic RAM Preview function. Whether you've purposely loaded frames into your RAM by manually building a dynamic RAM preview section or frames have been loaded in automatically, you may find times when you want to clear all frames from this function.

- In the main menu, choose TOOLS | CLEAR DYNAMIC RAM PREVIEW.

This flushes all frames from your RAM and frees that memory for other uses.

Zooming and Panning in the Video Preview Window

new since VEGAS Pro 23

The user can now zoom into and out of the Video Preview window. This helps especially to see the details of an object while working with the Bèzier Masking tools, seeing fine details of color grading adjustments, and many other uses. The user can zoom into any target area of the video preview window and scroll the zoomed view to see different areas without first zooming back out.

> **NOTE** This feature affects only your Video Preview. With this, you are not actually creating a zoom edit in your video. If you want that type of edit, use the Picture in Picture OFX plug-in. If you render your project while you've zoomed into or out of your Video Preview window, that zoom setting will have no effect on your render—the project will still render at 100% zoom level (normal zoom).

Using Preview Zoom

- To zoom in for a closer look:

  Click the ZOOM VIDEO PREVIEW button and choose a zoom level from the drop-down list.
- To increase your zoom level up or down:

  Use the + or - options to increase or decrease the zoom level by five percent.
- To toggle quickly between the current zoom setting and 100% zoom:

  Select BYPASS ZOOM .

Zooming with keyboard shortcuts

The keyboard shortcuts for accessing these zoom options using the computer's number pad.

- Increase by 5%:Ctrl+Num+
- Decrease by 5%: Ctrl+Num-
- Bypass zoom: Ctrl+Shift+Num1

Zooming with mouse wheel

- Point your mouse to the Video Preview window and roll the mouse wheel away from you to zoom in.
- Roll the mouse wheel towards you to zoom back out.

- Double-click the Video Preview window with the mouse's scroll wheel to instantly reset the zoom to 100%.

Panning in the Preview

- Zoom in on a specific object or area by pointing to it in the Video Preview window.
- Click and hold the mouse wheel to pan through the video.
- Drag the mouse to move the preview and explore different areas.

Adjusting Zoom Speed

- Hold the Ctrl key while rolling the mouse wheel to adjust the zoom speed.
- With Ctrl held, each step of the mouse wheel will adjust the zoom by only 1% instead of the default 10%.

Using an External Video Monitor

External video preview allows you to reclaim valuable real estate in the VEGAS Pro window, check colors and safe areas on a broadcast monitor, or just view a full-screen preview of your project.

> **TIP**
> If you want to preview on your external monitor and in the Video Preview window at the same time, select the DISPLAY FRAMES IN VIDEO PREVIEW WINDOW DURING PLAYBACK checkbox on the Preview Device tab of the Preferences dialog.
>
> For more information, see Using the Video Preview window and Preview Device Tab

NOTE

- VEGAS Pro allows you to use one external video device at a time. The external monitor display will be unavailable during video capture.
- When using an external video monitor, you need to enable external-monitor preview each time you start VEGAS Pro. This change was made to prevent the possibility of hiding the main VEGAS Pro window behind the secondary display when monitors are improperly configured.

External monitor via DVI (Windows Graphics Card)

If your Windows desktop is extended across multiple displays, you can use one of those displays to preview the timeline with no A/V synchronization drift — perfect for ADR and Foley work.

IMPORTANT If you intend to deliver your project in an interlaced format, previewing on a computer monitor is not a substitute for previewing on an interlaced broadcast monitor.

Preview requirements:

- A multiple-output graphics card that supports 3D acceleration (or multiple graphics cards: you could install AGP and PCI video cards in your system, for example).

  You can also use the Windows Graphics Card device on a computer with a single monitor. When you enable the external monitor, the video preview will fill your screen.
- A CRT, LCD, or projector connected to your computer's secondary video output.

  If you have a video card with DVI outputs, you can use a DVI-to-HDMI converter to connect to an HDMI monitor.
- The EXTEND MY WINDOWS DESKTOP ONTO THIS MONITOR checkbox must be selected on the Windows settings tab of the Display Properties dialog (Windows | Start | Settings | Control Panel | Display).

> **NOTE**
>
> - VEGAS Pro allows you to use one external video device at a time. The external monitor display will be unavailable during video capture.
> - When using an external video monitor, you need to enable external-monitor preview each time you start VEGAS Pro. This change was made to prevent the possibility of hiding the main VEGAS Pro window behind the secondary display when monitors are improperly configured.

1. Use the Preview Device tab in the Preferences dialog to configure the display you want to use as a video preview monitor.

   For more information, see Preview Device Tab

2. Select the PREVIEW ON EXTERNAL MONITOR button in the Video Preview window.

   You can turn off external preview by pressing Alt+Shift+4 or by clicking the secondary display and pressing Esc.

   > **TIP** Video is sent to your secondary display and the Video Preview window at the same time. If you experience dropped frames, try clearing the DISPLAY FRAMES IN VIDEO PREVIEW WINDOW DURING PLAYBACK checkbox on the Preview Device tab in the Preferences dialog.

External monitor via SDI

You can send video directly from the timeline to a video monitor connected to an SDI card.

IMPORTANT

Supported Blackmagic Design devices:

- DeckLink 4K Extreme 12G, 4K Pro, 4K Extreme, Studio 4K, SDI 4K, HD Extreme, Extreme 3D, Mini Monitor, and Mini Recorder.
- Intensity Shuttle, Pro 4K, and Pro.
- UltraStudio 4K Extreme, 4K, Pro, SDI, Express, Mini Monitor, and Mini Recorder.

Supported AJA devices: AJA Io 4K, KONA 3X, LH, LHe, LHi, LS, and LSe. Please note that AJA XENA cards are now branded as KONA cards. For more information, see http://www.aja.com/products/kona/transition.php.

NOTE

- VEGAS Pro allows you to use one external video device at a time. The external monitor display will be unavailable during video capture.
- When using an external video monitor, you need to enable external-monitor preview each time you start VEGAS Pro. This change was made to prevent the possibility of hiding the main VEGAS Pro window behind the secondary display when monitors are improperly configured.

1. Use the Preview Device tab in the Preferences dialog to configure your SDI card.

   For more information, see Preview Device Tab

2. Select the PREVIEW ON EXTERNAL MONITOR button in the Video Preview window.

   You can turn off external preview by pressing Alt+Shift+4.

   TIP Video is sent to the external monitor and the Video Preview window at the same time. If you experience dropped frames, try clearing the DISPLAY FRAMES IN VIDEO PREVIEW WINDOW DURING PLAYBACK checkbox on the Preview Device tab in the Preferences dialog.

Creating proxy files for high-definition editing

If you're working on a system with limited processing power, creating a proxy file will streamline the editing process and allow you to preview your project.

> **NOTE** Video proxy files are not used for rendering your project.

1. Capture or import your high-definition clips.
2. Start a new project.
3. Add your high-definition clips to the Project Media window.
4. Right-click the clips in the Project Media window and choose CREATE VIDEO PROXY from the shortcut menu.

   VEGAS Pro creates video proxy files (.sfvp0) alongside the original files in Windows Explorer. You will not see these files in the Project Media window or VEGAS Pro Explorer.

   > **TIP** Proxy files are created automatically when working with 4K video.

5. Add your high-definition clips to the timeline and edit your project as usual.

   The PREVIEW QUALITY setting in the Video Preview window determines whether the proxy files or original files are used for editing and preview:

   - When the preview quality is set to DRAFT or PREVIEW, the proxy file is used.
   - When the preview quality is set to GOOD or BEST, the original file is used.

ⓘ For more information, see Adjusting the preview quality and resolution

Selectively prerender video

From the TOOLS menu, choose SELECTIVELY PRERENDER VIDEO to render temporary preview files for the sections of your project that cannot be rendered in real time. These temporary preview files are used when you play back that section of the project.

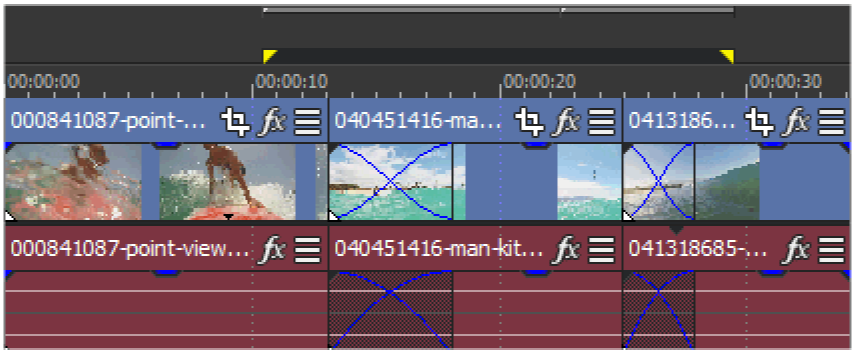
When you perform a selective prerender, a separate preview file is created for each section of your project that needs to be prerendered. Sections that contain transitions, effects, and compositing will need to be prerendered; unprocessed DV media files will not.

> **TIP** Selective prerendering is helpful when previewing on an external monitor. For more information, see Using an External Video Monitor

1. Select the area of your project that you want to preview. If there is no time selection, the entire project will be used.
2. From the TOOLS menu, choose SELECTIVELY PRERENDER VIDEO. The Prerender Video dialog appears.
3. Choose a template from the TEMPLATE drop-down list to specify the parameters that should be used for rendering your file, or click the CUSTOM button to create a new template. For more information, see Custom rendering templates

> **NOTE**
>
> - Select the STRETCH VIDEO TO FILL OUTPUT FRAME SIZE (DO NOT LETTERBOX) checkbox when you are rendering to an output format with a slightly different aspect ratio than your project settings. This will prevent black bars from appearing on the top and bottom or the sides of the output.
> - Select the USE PROJECT OUTPUT ROTATION SETTING checkbox if you're rendering a rotated project and want to use the OUTPUT ROTATION setting from the Project Properties dialog for your rendered file.
>
>   When the checkbox is cleared, the media is rotated according to its Media Properties setting, but the project itself is unrotated—you can use this setting to proof your project on an unrotated display. For more information, see [Creating rotated projects]()
> - You'll need to choose a rendering template that inserts fields to create a standard DV file if your project properties are set to 24p or if you selected the ALLOW PULLDOWN REMOVAL WHEN OPENING 24P DV checkbox on the General tab of the Preferences dialog. Use the NTSC DV 24P (INSERTING 2-3-3-2 PULLDOWN) template if you intend to use the file on the VEGAS Pro timeline.
>
>   If you cleared the ALLOW PULLDOWN REMOVAL WHEN OPENING 24P DV checkbox before adding your media and your project properties are not set to 24p, your 24p video is read as 29.97 fps interlaced video (60i), so you can choose whichever NTSC DV or PAL DV template suits your project requirements.

4. Click the RENDER button. The rendering process begins and a progress box appears. When completed, a bar appears at the top of the timeline to indicate each rendered section.


00:00:00
00:00:10
00:00:20
00:00:30
000841087-point-...
040451416-ma...
0413186...
000841087-point-view...
040451416-man-kit...
041318685-...

> **NOTE** Each prerendered section will consist of no more than 300 frames (approximately 40 megabytes). Because selective prerendering creates multiple files, minor editing on the timeline will not invalidate all of your prerendered video—only the sections you modify will need to be rerendered.

Cleaning up prerendered video files

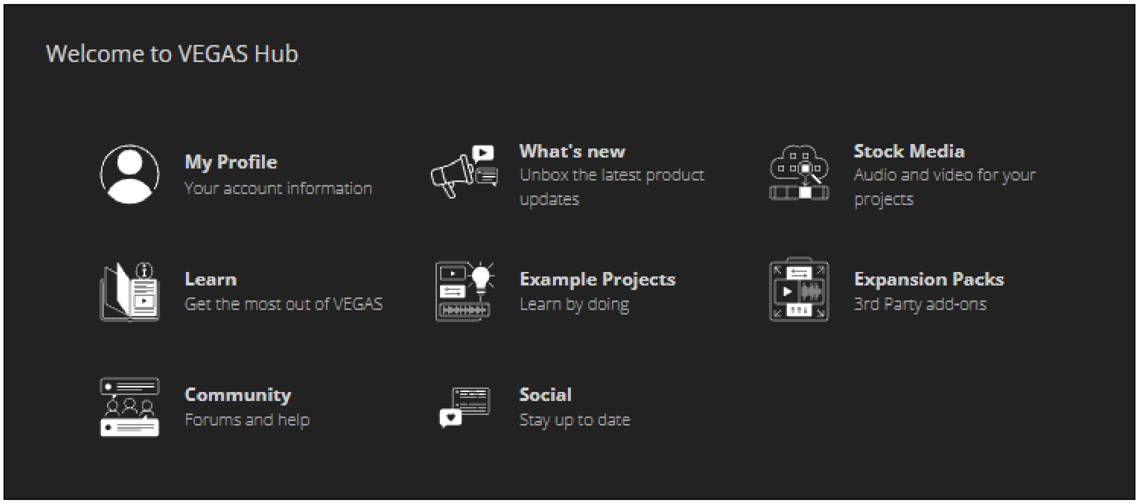
From the Tools menu, choose CLEAN UP PRERENDERED VIDEO to delete the temporary files created as a result of using the SELECTIVELY PRERENDER VIDEO command. For more information, see Selectively prerender video

Use the CLEAN UP PRERENDERED VIDEO dialog to specify which prerendered files should be deleted: you can remove only inactive files (files for media that is no longer used on the timeline), all prerendered files, or all prerendered files within a time selection.

VEGAS Hub H

The VEGAS Hub is the centralized platform, designed to enhance your video editing workflow by providing easy access to cloud storage, mobile app integration, stock media, and more.

> **NOTE** The availability of functions depends on the existing license. You can find further information on our website.



Welcome to VEGAS Hub

My Profile
Your account information

What's new
Unbox the latest product updates

Stock Media
Audio and video for your projects

Learn
Get the most out of VEGAS

Example Projects
Learn by doing

Expansion Packs
3rd Party add-ons

Community
Forums and help

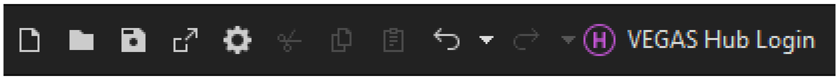
Social
Stay up to date

My Profile	Manage your account information.
What's new	Stay updated with the latest product updates.
Stock Media	Browse and utilize audio and video for your projects. For more information, see Adding Stock Content
Learn	Access tutorials to improve your skills.
Example Projects	Engage in hands-on learning with an example project.
Expansion Packs	Explore and add third-party add-ons.
Community	Connect with forums and help resources.
Social	Stay connected with the latest social updates.

> **NOTE** Some features of VEGAS Hub are in beta and may not work as expected or be fully implemented. New content and functionality will be continually added to VEGAS Hub as its development continues.

How to use VEGAS Hub

1. Click the VEGAS HUB LOGIN button in the main toolbar and log in with your MAGIX account.



2. Choose VIEW | WINDOW | VEGAS HUB to open the VEGAS Hub window.

   The home screen of the VEGAS Hub window contains buttons for the various available features. To access a feature, click the corresponding button.

How do I sign up?

You can only use the functions, such as stock content or speech recognition, if you are logged in. You can only access help without logging in.

1. Click on MY PROFILES or a function. If you are not yet logged in, you will be prompted to log in.
2. Click on REGISTRATION.
3. Select your email address (if you were already logged in) or click on the + sign to select another MAGIX account.

> **TIP**
> Forgot your password?
>
> 1. Click on the button with the three dots → Forgot on the login screen.
> 2. Please enter the email address of your MAGIX account.
> 3. Click on Reset password. You will receive an email to create a new password.
>
> Have you changed your email address?
>
> Log in to the MAGIX Service Center and change your address under: MY ACCOUNT → USER DATA → CHANGE DATA.

Hub services

If you need additional resources for your projects, the upgrade packages offer you a flexible way to supplement your credit. With these packages, you can expand your credit in the following areas:

- Additional characters for converting text to speech
- More minutes for transcriptions of speech to text
- Increased number of downloads for stock content
- Expanded Cloud storage for your media

Activate credit

1. Click on MY PROFILE in the HUB window.
2. Click on BUY VOUCHER.

   You will be redirected to an external site from MAGIX.
3. Select all the desired packs and add them to your shopping cart.
4. Click on CONTINUE and login with your MAGIX account information.
5. Choose a payment option and click BUY NOW.

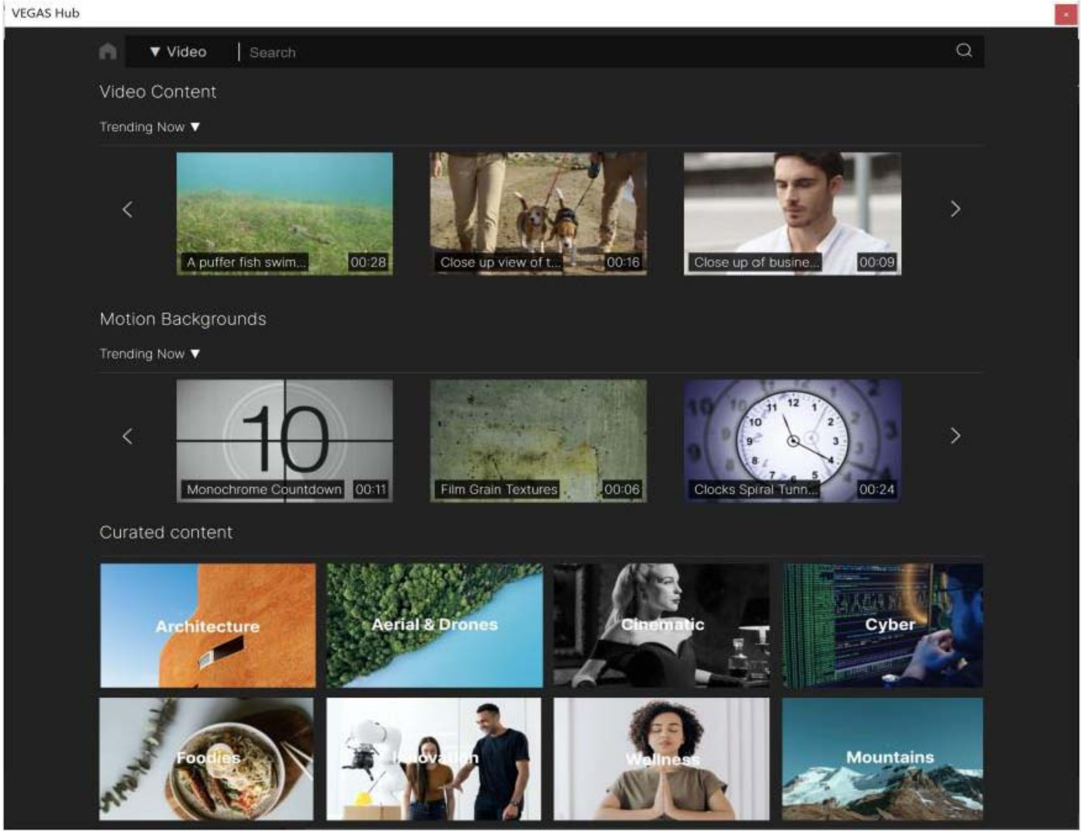
   Subsequently, you will receive an order confirmation with a voucher code per email.
6. Go back to VEGAS Pro and once again open the HUB window → MY PROFILE.
7. Enter your voucher code in the REDEEM VOUCHER field and then click on REDEEM CODE to redeem your code.

Adding Stock Content

VEGAS Content gives VEGAS Pro 365 & VEGAS Post 365 subscribers access to nearly a million stock music tracks and video clips. You can use these clips royalty free in any VEGAS Pro project.

How to access to VEGAS Content

1. Click the VEGAS Hub H Login button to access VEGAS Hub.
2. In the VEGAS HUB window, click the STOCK MEDIA button to open the content browser.


VEGAS Hub
▼ Video
Search
Video Content
Trending Now ▼
A puffer fish swim...
00:28
Close up view of t...
00:16
Close up of busine...
00:09
Motion Backgrounds
Trending Now ▼
Monochrome Countdown
00:11
Film Grain Textures
00:06
Clocks Spiral Tunn...
00:24
Curated content
Architecture
Aerial & Drones
Cinematic
Cyber
Foodies
Innovation
Wellness
Mountains

NOTE
If your available credit has been used up, you can purchase additional credit.

For more information see Activate credit.

Search for content

There are several options for searching for specific content and filtering the results.

1. Click the Media Type drop-down list and choose the type of content--audio or video--that you want to preview.
2. Enter a search term in the field and click Enter or the SEARCH button to start the search.

TIP

- Click the magnifying glass in the empty search field to filter all content.
- You can enter BPM values for audio files and pixel size for video files so that only files with a specific tempo or resolution appear in the search results.

3. You can narrow your search results further according to:
    - Content type
    - Details
    - Duration (minimum and maximum length)
    - Frame rate (video only)
    - Genres (audio only)
    - Moods (audio only)
    - Instruments (audio only)
    - BPM (audio only)
4. Click on the house icon to return to the start page.

Displaying and using content

Show preview

- To preview an audio file, click its waveform. The file begins to play automatically.
- To preview a video file, double-click the video thumbnail. Click the Play button.

Download content

1. Click the DOWNLOAD button and the file format and resolution from the list that you want to download.

2. Close the window once downloading is complete.

   To find your downloaded files, open the HUB EXPLORER window.

> **TIP**
> Add content directly to the timeline or Project Media
>
> The ADD TO PROJECT MEDIA button enables you to download the file and add it directly into your Project Media list so that it becomes part of your existing project.
>
> The INSERT ON TIMELINE button also downloads the file and adds it to your Project Media list, but in addition, it adds it to the timeline of your project where you can instantly begin to edit it.

Add to Project Media

Insert on Timeline

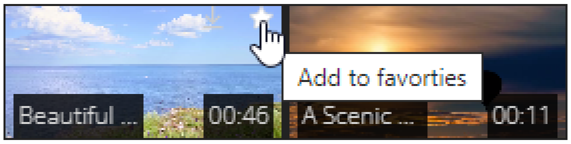
> **IMPORTANT** The EULA that you agreed to when installing VEGAS Pro has the details for what you can and cannot do with the stock footage available via VEGAS Content. Please refer to it regarding any copyright disputes that may arise from the use of this content on social media sites.

Favorites

Add content to favorites

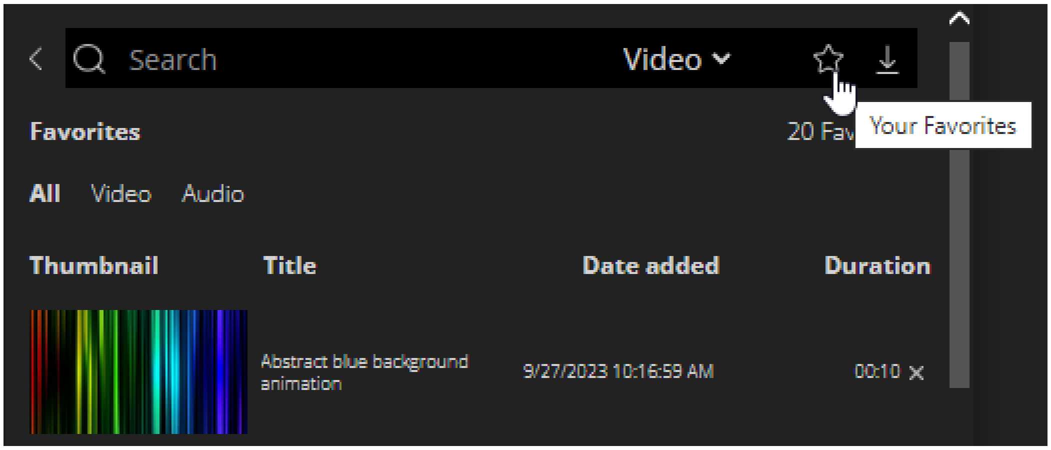
If, while browsing the content library, you come across files you like or want to use for future projects, you can mark them as favorites. This feature is particularly useful if you have already exceeded your download quota or if you want to pre-select content before downloading the files.

» Click the star symbol to mark the content as a favorite.



Show favorites

» Click on the star in the search box to view all your saved favorites.

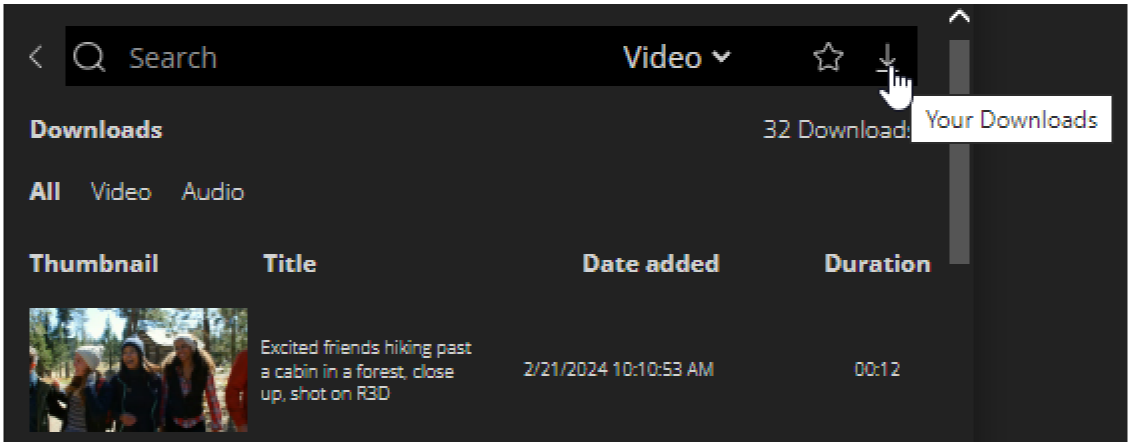

Search
Video
Your Favorites
Favorites
20 Fav
All
Video
Audio

Thumbnail	Title	Date added	Duration
	Abstract blue background animation	9/27/2023 10:16:59 AM	00:10

Show downloads

You can view all the content you have downloaded here:

- Click on the download icon in the search box to open the list.


Search
Video
Your Downloads
Downloads
32 Download
All
Video
Audio

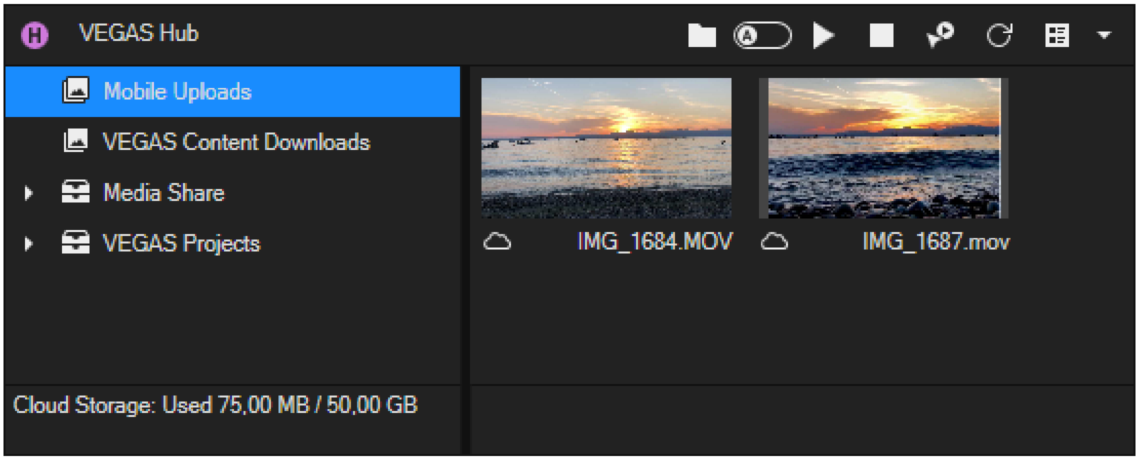
Thumbnail	Title	Date added	Duration
	Excited friends hiking past a cabin in a forest, close up, shot on R3D	2/21/2024 10:10:53 AM	00:12

- or -

- Hub Explorer | VEGAS Content Downloads

VEGAS Hub Explorer

The VEGAS Hub Explorer window shows you a list of collections and enables you to quickly and easily transfer video from your cloud storage (uploaded from your mobile device) or the VEGAS Content library to your VEGAS Pro projects.



Cloud Storage: Used 75,00 MB / 50,00 GB

- VEGAS Content Downloads

  This collection contains all of the files that you have downloaded from the VEGAS Content database through the VEGAS Hub window. After you download them, these files exist only on your local drive. You can upload any of these files to your cloud storage.

  Adding Stock Content

- Media Share

  Share your media files or collections with other people.

  Media Share

- VEGAS Projects

  Organize and manage multiple project files and associated media within a single, easily accessible folder.

  Automatic project collections

Hub Explorer Toolbar

Additional controls at the top-right of the Hub Explorer window (shown above) enable you to set your file download location, play and stop file preview, enable or disable auto-play, refresh your window, and customize your layout.

Media Share

Using Cloud Storage

new since VEGAS Pro 23

The Media Share feature in VEGAS Pro simplifies the process of quickly gathering media from your collaborators, regardless of their location. It consolidates the Quick Upload and File Drop operations of previous versions of the VEGAS Hub Explorer into one central location. This functionality not only makes it easier to transfer files to the project editor but also enables efficient management and access to media. By utilizing the VEGAS Hub storage space, you can share your media collection, enable viewing, or quickly download files for use in your projects.

USE CASES

- Collaborative Editing:

  Share media files with team members for collective editing or review.
- Client Review:

  Allow clients to view and download media files for approval or feedback.
- Gathering Media:

  Invite contributors to upload media files directly into your project.

NOTE

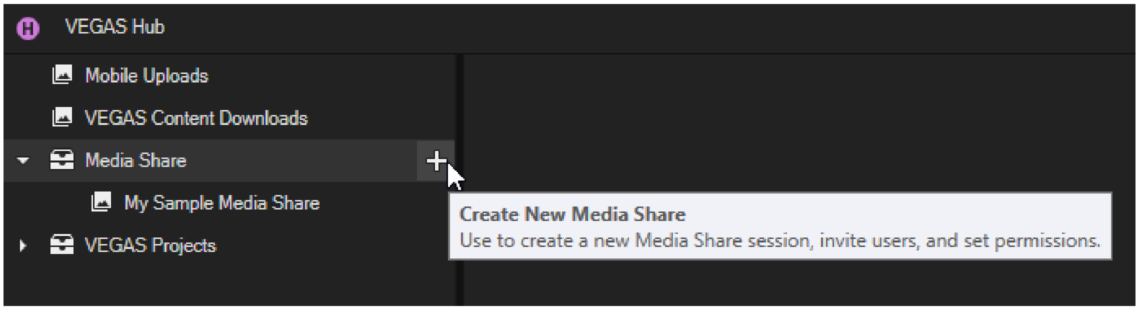
If your available credit has been used up, you can purchase additional credit.

For more information see Activate credit.

Manage your Media Share Collection

Create a Media Share Collection

1. Click the HUB EXPLORER tab to bring that window forward.
2. In the list at the left, click the CREATE NEW MEDIA SHARE BUTTON at the Media Share collection set.


VEGAS Hub
Mobile Uploads
VEGAS Content Downloads
Media Share
+
My Sample Media Share
VEGAS Projects

Create New Media Share
Use to create a new Media Share session, invite users, and set permissions.

3. In the CREATE NEW MEDIA SHARE dialog box, enter a name for your Media Share and click OK.

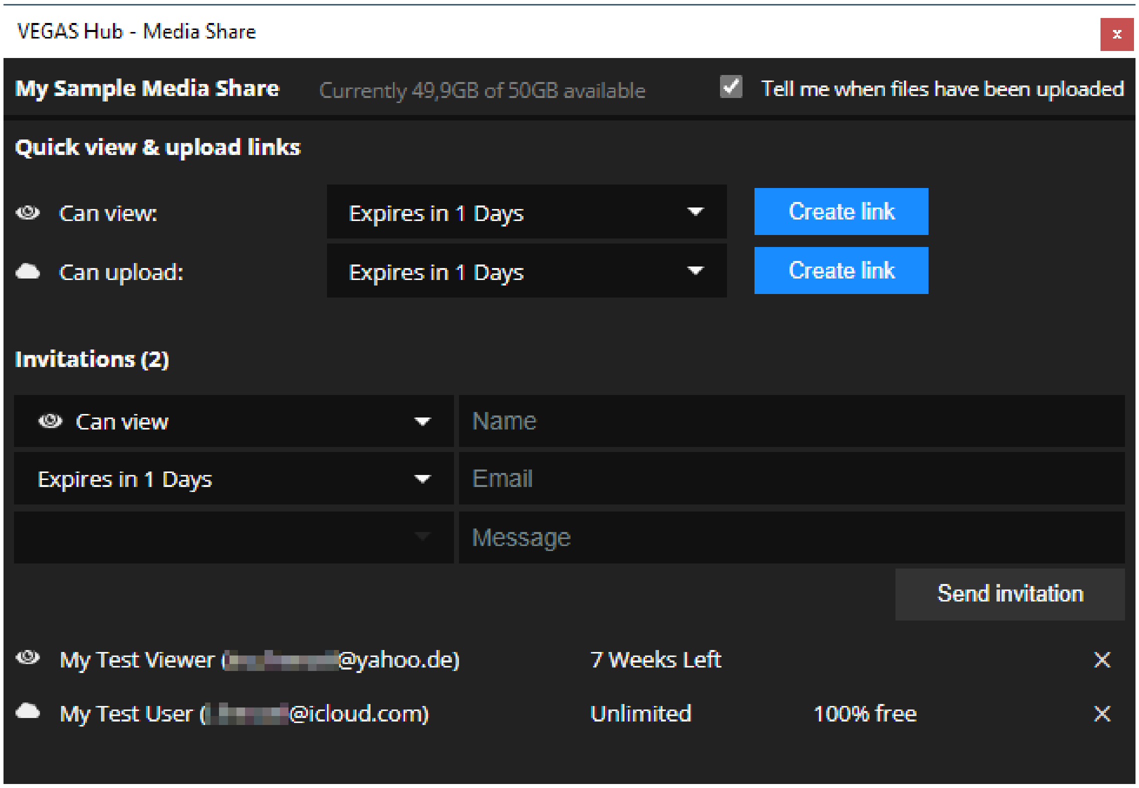
   Your new Media Share collection appears in the list.

Configure your Media Share Collection

Open the MANAGE MEDIA SHARE dialog

1. Point to the name of your Media Share collection in the HUB EXPLORER window.
2. Click the MANAGE MEDIA SHARE button ⚙ to open the MEDIA SHARE dialog.

   If you are not yet logged into your VEGAS Hub account, you'll be prompted to do so before you can continue.



VEGAS Hub - Media Share

My Sample Media Share Currently 49,9GB of 50GB available ☑ Tell me when files have been uploaded

Quick view & upload links

Can view: Expires in 1 Days

Can upload: Expires in 1 Days

Invitations (2)

Can view

Expires in 1 Days

Name

Email

Message

My Test Viewer ([redacted]@yahoo.de) 7 Weeks Left

My Test User ([redacted]@icloud.com) Unlimited 100% free

Add participants

Three methods are available to add participates. These participates may be set to only download and view the collection or they may be set to upload media.

1 Create and copy a link

1. In the QUICK VIEW & UPLOAD LINKS section, select whether your attendee will be able to view and download only or upload as well.
2. In the drop-down list, set the expiration period for how long the link will be valid.
3. Click the CREATE LINK button.
4. Click the COPY icon to copy the link to the clipboard and share it with your participants.

2 Create a link and scan a QR code

1. In the QUICK VIEW & UPLOAD LINKS section, select whether your attendee will be able to view and download only or upload as well.
2. In the drop-down list, set the expiration period for how long the link will be valid.
3. Click the CREATE LINK button.
4. Click the QR CODE icon to display a QR code that can be scanned with a mobile device.

3 Send an invitation

1. In the INVITATIONS section, click the NEW INVITATION button.
2. In the upper drop-down list, select whether your attendee will be able to view and download only or upload as well.
3. In the lower drop-down list, set the expiration period for how long the link will be valid.
4. Enter name and mail address of the participant you want to invite to your Media Share session.

> **NOTE** It’s important to note that the users you invite do not have to have access to their own VEGAS Hub account. In fact, they don’t even need to be users of VEGAS Pro at all. All they need is an internet connection and a connected device that holds their files. That device can be a computer, a tablet, a mobile device, and so on. And that device can be running on any operating system, so you can collect files from collaborators on a Mac just as easily as on a Windows machine or an Android mobile device. All that matters is that the device is connected and has access to the files they want to upload.

5. Click the SEND INVITATION button.

VEGAS Pro automatically sends an email message to the address you entered. That email message includes a link to your Media Share. Once the collaborator follows that link, they will have the opportunity to view or upload files.

You can add as many collaborators to the Media Share event as you want to.

Enable Notifications

If you want to receive an automatically generated email when files have been uploaded to your Media Share:

» Select the TELL ME WHEN FILES HAVE BEEN UPLOADED checkbox.

Remove a participant

» Click the cross button ☒ in the MEDIA SHARE dialog.

Delete a Media Share Collection

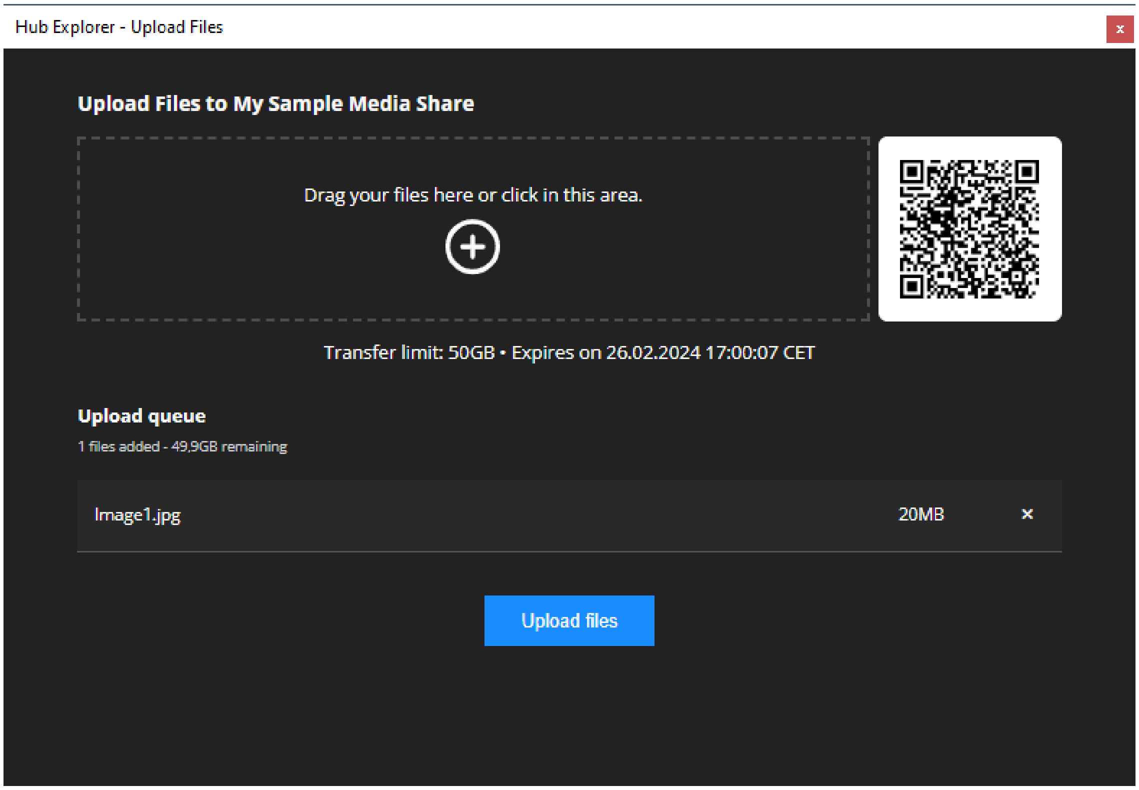
1. Point to the name of your Media Share Collection in the HUB EXPLORER window.
2. Click the MORE ⋯ button | REMOVE.

Manage Files

Upload Files

The Upload Files function (formerly Quick Upload) enables you to upload files from your computer or other device to your VEGAS Hub Media Share collections. This makes it possible to quickly upload files to your Hub storage for a cloud back up of your media, or so that you can then download them to another computer so you can use them in your VEGAS projects.

» In the HUB EXPLORER window, point to your Media Share collection and then click the UPLOAD FILE TO CLOUD ☁ button. The UPLOAD FILES dialog box opens.



Hub Explorer - Upload Files

Upload Files to My Sample Media Share

Drag your files here or click in this area.

Transfer limit: 50GB • Expires on 26.02.2024 17:00:07 CET

Upload queue

1 files added - 49,9GB remaining

Image1.jpg 20MB

Upload files from your computer

1. Switch to Windows Explorer and navigate to a file that contains the media you want to upload.
2. Drag a file from your Windows Explorer folder onto the Drop Files target area. Notice that the file has been added to the Upload queue.
3. Click inside the file target area.
4. In the Open dialog, browse to the folder that holds your media, select the media file, and click Open. This file has also been added to the Upload queue.
5. When you've added all the files you want to upload from your computer, click the UPLOAD FILES button.

Upload files from your mobile devices

1. Open the camera app on your mobile device and point the camera at the QR code in the Upload Files dialog box.
2. Follow the instructions on your mobile device to go to the URL supplied by the QR code.

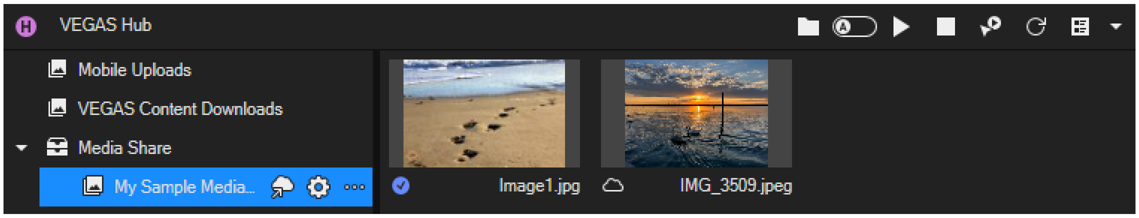
   This opens your device’s Internet browser and points to a page that enables you to add files to your upload queue just as you did on your computer.
3. Tap the Drag Files area and navigate to the location on your device that holds the media you want to upload.
4. Tap the media to add it to the Upload queue.
5. When you’re finished, tap the UPLOAD FILES button.

   Once your files are uploaded to your VEGAS Hub, you will see the files in your Hub Explorer window inside VEGAS Pro.

Download and Sync Files for Use

Once you or your collaborators have uploaded files through the Media Share system, those files are automatically added to your Media Share collection.

Click the ↻ REFRESH COLLECTION VIEW button in the toolbar of the HUB EXPLORER window to see all of the files that have been uploaded to the Media Share.



Before you can add them to your VEGAS Pro project, you’ll need to synchronize your hub collection files and bring them down locally.

The uploaded files have ☁ cloud icons before their names. As usual, this indicates that the files are stored only in your VEGAS Hub storage.

» Right-click the file in the HUB EXPLORER window and choose SYNC from the context menu.

After a few moments, the file download completes and the blue checkmark icon ✓ shows that the file now resides both locally and on your VEGAS Hub storage.

Delete files

To delete a file from either your local collection or your VEGAS Hub storage:

» Right-click the thumbnail and choose the appropriate REMOVE option from the context menu.

> **NOTE** Keep in mind that this removes the actual file itself from your hard drive, not just the reference in the Media Share collection, so be careful with this option.

Automatic project collections

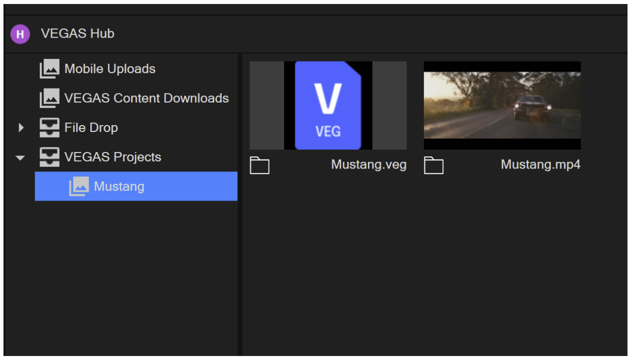
new since VEGAS Pro 23

> **NOTE** This function only works if you are logged in to VEGAS Hub.

A Project collection organizes all of your project’s assets into a single view that you can easily access through the Hub Explorer window. These collections provide fast and easy access to all of your projects and their associated files.

When you save your project, VEGAS Pro automatically creates a project collection, or updates your existing collection. You can simply use this feature to organize your ongoing projects, or you can create special projects that you use to organize your media files. For instance, you could create a new project called “Sports cars” and import all of your sports car footage into that project so you can easily access that media later.

Collections exist locally, so perpetual users as well as subscription users can take advantage of them. You can also create a local archive that includes copies of all of your project’s assets.


VEGAS Hub
Mobile Uploads
VEGAS Content Downloads
File Drop
VEGAS Projects
Mustang
V
VEG
Mustang.veg
Mustang.mp4

Organizing Projects with Automatic Project Collections

1. Start a new VEGAS project.
2. Add at least one audio or video file to your project.

   You can add it directly to the timeline, or just import it into the Project Media window file list.
3. Save your project.
4. Click the Hub Explorer tab to bring that window to the front.
5. In the list of collections at the left, click the VEGAS Projects drop-down arrow.

   The expanded list contains a new collection with the same name that you gave your project.
6. Click the collection. In the media pane on the right, you see your VEG file and all of the media files you've added to your project.

TIP

- You can access a project collection anytime to reuse media from one project in another.
- To add media from a collection to a new project, drag the desired files into the new project's timeline.
- To nest an entire project into a new project, drag the project's VEG file into the new project's timeline.

Archiving and Deleting:

- To create an archive of your project, right-click the collection name and choose "Archive" from the context menu. Follow the Archive wizard to specify the parameters of your archive.
- To delete a project collection, right-click it in the list and choose "Remove" from the context menu. This only removes the reference, not the actual files.

> **NOTE** Keep in mind that you’re working just with an organizational tool here. When you automatically create a project collection, you’re simply creating references to the project and its media. It’s important to remember that you are not creating copies of any of these files. Likewise, when you delete a collection, you’re merely deleting the reference to the media and project file. You are not deleting any files from your system!

Disabling the Automatic Feature

- If you don't want to create or update a collection for the project you're working on:

  Click the "Create Project Collection" toggle button to turn it off.

  Existing collections will still be visible and accessible, but no new ones will be created or updated.
- To enable the feature again, click the "Create Project Collection" toggle button.

Video Editing

Editing Tool

Choose EDIT | EDITING TOOL and select a tool from the submenu to change the active tool, or select the tool from the transport and editing toolbar.

For more information, see The Transport and Editing Toolbar

Tool	Description
Normal Edit Tool	Use to select, move, and trim the ends of events. Click an event to select it. Hold Ctrl while clicking to select multiple events, or hold Shift to select all events between the first and last event you click. Select events and drag them along the timeline to move them. Drag either edge of an event to change its length. The event edge will snap to grid lines if snapping is on. Hold the Shift key while dragging to temporarily suspend snapping. **FURTHER INFORMATION** • Enable snapping • Creating selections and positioning the cursor • Moving events • Adjusting an event's length
Shuffle Tool	Use to rearrange events on the timeline. For more information, see Shuffling events **TIP** Right-click and drag an event to a new location on the timeline and choose SHUFFLE EVENTS from the shortcut menu to shuffle events when the Shuffle Tool is not active.

Tool	Description
Slip Tool	Use to slip an event's media without moving the event on the timeline. For more information, see Slipping and sliding events **TIP** Hold Alt while dragging an event to slip events when the Slip Tool is not active.
Slide Tool	Use to move an event on the timeline without moving the underlying media. For more information, see Slipping and sliding events **TIP** Hold Ctrl+Alt while dragging an event to slide events when the Slide Tool is not active.
Time Stretch/Compress Tool	Use to make events longer or shorter while changing the velocity of the media to create fast- or slow-motion effects. For more information, see Adjusting an event's length **TIP** Hold Ctrl while dragging the edge of an event to time stretch/compress events when the Time Stretch/Compress Tool is not active.

Tool	Description
Split Trim Tool	Use to split an event at the point you click and trim the event in the direction you drag (eraser mode). For more information, see [Slipping and sliding events]() **TIP** Hold Ctrl+Alt+Shift and drag to split trim events when the Split Trim Tool is not active.

Normal

To use the Normal tool , choose EDITING TOOL from the EDIT menu, and choose NORMAL from the submenu.

This tool gives you the most flexibility while editing; selection, project navigation, most envelope editing, etc. The only functions you cannot perform while in normal editing mode are box selection, box magnification, and multiple envelope point selection.

For more information, see [Adjusting envelopes]()

TIP

Instant access to the Selection Tool from the Normal Edit tool

---

Sometimes when you're editing quickly, you need to select all of the events within a certain range of your timeline.

In order to quickly move to the Selection Edit tool without interrupting your workflow, while still using the Normal Edit tool:

1. Click in your timeline and hold the left mouse button down.
2. While still holding the left mouse button down, click the right mouse button. This switches you to the Selection Edit tool and you can quickly make a selection.

   The Selection Edit tool opens in whatever of its three selection states you last left if.
3. To scroll through the three selection states, repeatedly click the right mouse button (while still holding the left button down).

   This scrolls you through the free-selection, horizontal selection, and vertical selection states.
4. Once you've made your selection, release the left mouse button and you instantly return to the Normal Edit tool.

Selecting events

Click an event to select it. Hold Ctrl while clicking to select multiple events, or hold Shift to select all events between the first and last event you click.

Moving events

Select events and drag them along the timeline.

Changing an event's length

Drag either edge of an event to change its length. The event edge will snap to grid lines if snapping is on. Hold the Shift key while dragging to temporarily suspend snapping.

For more information, see Enable snapping

Envelope

To use the Envelope tool, choose EDIT | EDITING TOOL | ENVELOPE.

The Envelope tool is designed to manipulate envelopes in events. With the Envelope tool selected, you can add, delete, select, and move envelope points, but events cannot be moved or edited.

For more information, see Adjusting envelopes

Selection

To use the Selection tool, choose EDIT | EDITING TOOL | SELECTION.

The Selection tool is designed to select multiple events across tracks by drawing selection boxes around the events you want to include. The Selection tool can draw three types of selection boxes:

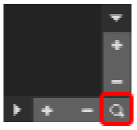
Type	Description
Free Selection	The default behavior of the tool: - Click to select individual events (hold Shift or Ctrl to select multiple events). - Drag to draw a rectangular region that begins where you start drawing and ends where you release the mouse button. All of the events that are inside the region will be selected. This method is good for selecting a group of events that are close together.
Vertical	Can be used to easily select all events that occur within a time range. The vertical selection box automatically selects all of the tracks between your first mouse click and where you draw the selection box; even tracks that are not visible at the current magnification are selected.
Horizontal	Can be used to easily select all events on a single or multiple adjacent tracks. The horizontal selection box automatically selects all events on a track that is touched by the selection box; even events that are not visible at the current magnification are selected.

To change the type of selection box you are using, right-click the mouse while holding down the left mouse button. Clicking the right mouse button will toggle through the three types of selection boxes.

Zoom

To use the Zoom tool, choose EDIT | EDITING TOOL | ZOOM. You can use the zoom tool to change the magnification of the VEGAS Pro project.

> **TIP** Click the ZOOM button in the corner of the timeline to temporarily change the cursor into the Zoom tool. Select an area of the timeline that you want to magnify, and the cursor will revert to the previously active tool.



> **TIP** Before zooming, you can maximize the timeline by using the following shortcuts:

- Press F11 to maximize the timeline vertically (Window Docking area will be hidden).
- Press Ctrl+F11 to maximize the timeline vertically and horizontally (Window Docking area and Track List will be hidden).
- Press Shift+F11 to maximize the timeline horizontally (Track List will be hidden).

Drag the mouse over the area you want to magnify. A dotted rectangle is drawn around the area, and the area is magnified when the mouse button is released.

While holding the left mouse button, click the right mouse button to toggle through the three magnification modes:

Item	Description
Free Zoom	The default behavior of the Zoom tool. Use this mode to zoom into a section of your VEGAS Pro project horizontally and vertically at the same time.
Time Zoom	Use this mode to zoom horizontally without changing the vertical magnification.
Track Height Zoom	Use this mode to zoom vertically without changing the horizontal magnification.

> **TIP** Clicking anywhere in the project with the Zoom tool will zoom out so that the entire project fits in the timeline, and as many tracks as possible will be displayed.

Next Tool

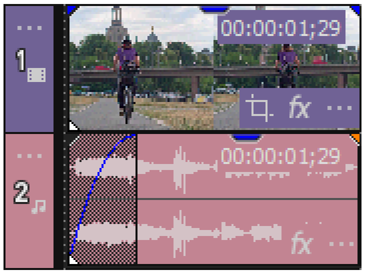
Choose NEXT TOOL (or press D) to switch to the next tool in the list. For example, if you're using the Normal tool, NEXT TOOL selects the Envelope tool.

Previous Tool

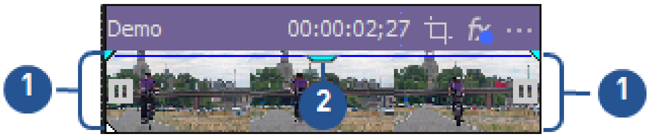
Choose PREVIOUS TOOL (or press Shift+D) to switch to the next tool in the list. For example, if you're using the Envelope tool, PREVIOUS TOOL selects the Normal tool.

Editing events on the timeline

Events are containers on the timeline that contain media. Each event can contain more than one media file. Each media file in an event is called a take. An event also provides access to features that allow cropping, fade in and out, opacity, gain, and other tools to control and edit events. Events are divided into two broad categories: Video events and Audio events. Some of the tools are specific to the type of event: audio or video.



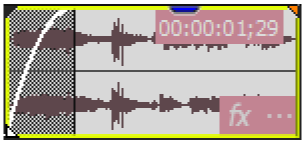
Each event has a header that by default displays the event name, the Crop icon, the FX icon, and the More button that opens a cascading menu of other tools for the event type.



Directly below the Event header is the part of an event that contains thumbnails of the video frames for a video event and a waveform display for an audio event.

In the left and right corners are fade-in and fade-out handles. 1

The handle in the top center of a video event controls the overall opacity of that event and, for an audio event, the overall volume of that event. 2.



The color of the event corresponds to the color of the track header. When you select an event, the frame turns yellow to indicate that it is the currently selected event.

More often than not, you probably won't want to use an entire media file as an event on a track. The VEGAS® Pro timeline makes it easy for you to manipulate and arrange events.

> **NOTE**
> If VEGAS Pro cannot read frames in a video event, they will be displayed in red in the timeline (those frames will be black in the Video Preview window and the rendered output):

Inserting an empty event

From the Insert menu, choose EMPTY EVENT to insert a blank audio or video event on a track. You can specify a duration for the empty event or accept the default time. The type of event, either audio or video, depends on the type of track you have selected.

1. Select the track where you want to insert the event.
2. Click and drag along the Marker Bar to make a time selection for the new event (or, as a more precise alternative to dragging the mouse, hold down the Shift key and press the right arrow key to select the region).
3. From the Insert menu, choose EMPTY EVENT. The new event is placed on the track.

Inserting time

From the Insert menu, choose TIME to insert a specified amount of blank space into the VEGAS Pro project at the cursor position.

This feature can be used to create space in the project for new events and uses the time format of the Time Ruler. For more information, see Time ruler

> **TIP** If you want to remove time from all tracks in your project, create a time selection that encompasses the time you want to delete. Select the AUTO RIPPLE button (or press Ctrl+L). Next, click the down arrow ▾ next to the AUTO RIPPLE button and choose ALL TRACKS, MARKERS, AND REGIONS. When you delete the time selection, the selected portion of the timeline is removed, and events to the right of the deleted section Shift left to fill the space.

1. Select the tracks where you want to insert time.

   If no events are selected, time is inserted across all tracks. If you have events selected, time will be inserted at the cursor position in the selected events.
2. Position the cursor where you want to begin.
3. From the Insert menu, choose TIME. The Insert Time dialog box appears.
4. Specify the amount of time you want to insert and click OK.

Creating selections and positioning the cursor

Selecting data and positioning the cursor are the first steps in a variety of editing tasks. You can move selected events, copy them to the clipboard, delete, edit, and more.

There are different methods of selecting events depending on the type of selections you want to make and the active editing tool. For more information, see Editing Tool

> **TIP**
> You can also choose EDIT | SELECT and choose a command from the submenu for access to additional selection methods.

Selecting a single event

With the Normal or Selection tool active, click the event. The event is highlighted to indicate that it has been selected.

Selecting a range of events

new since VEGAS Pro 22

1. Point your mouse to an empty area of the timeline.
2. With the left mouse button, drag to create a selection rectangle around the events you want to select.

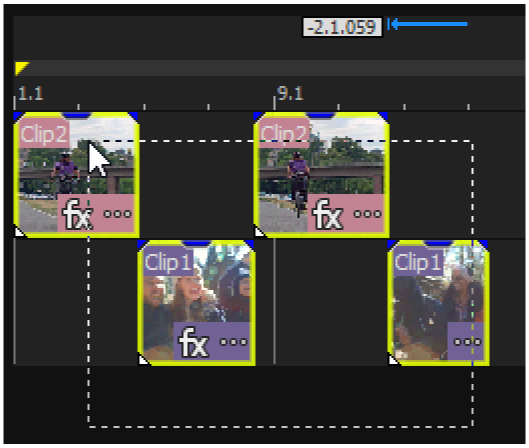


FIGURE *Event Selection with left mouse button*

Adjusting the Selection Box

You can change selection states while making your selection, just as you can when you use the Selection Edit tool specifically.

1. Modify Selection Width:

    - Make a selection with the left button, but don't release the button just yet.
    - With the left mouse button still down (so you're still in selection mode), click the right mouse button.

      This constrains the selection box so that you can only adjust the width of the box. Use this mode if you want to ensure that you select events within a specific range horizontally on all tracks in your project (even if you can't currently see them).

2. Modify Selection Height:

    - With the left button still down, click the right button again. Now you can only adjust the height of the selection box. Use this mode if you want to select everything on each track within the height of your selection box (again, regardless of whether you can see what's on the tracks or not).

3. Free-form Mode:

    - Click the right button again to toggle back to free-form mode where you can define both the width and height of the selection box.

Reverting to Old Behavior

If you've gotten used to the old behavior of the left button and you miss being able to use it to make time selections, follow these steps:

1. Choose OPTIONS | PREFERENCES.
2. In the PREFERENCES dialog box, click the EDITING tab.
3. Select the USE THE RIGHT MOUSE BUTTON TO SWITCH TO THE SELECTION EDIT TOOL checkbox.

   This swaps the mouse button used for all the behaviors described above.
4. Click OK. Now use the right button to switch to the Selection Edit tool.

Old Behavior:

1. Select the Selection [tool](#) ⬚.

   > **NOTE** You can add or subtract events from the selection area by holding down the Ctrl key and clickingon the event.

2. Place the mouse pointer at any corner of the area that you want to select.
3. Click and hold the mouse button.
4. Drag the cursor to the opposite corner of the area you want to select.

   > **TIP** Click the right mouse button while holding the left mouse button switch from rectangular selection, time selection,and track selection.

5. Release the mouse button (and the Ctrl key if you are pressing it). The events are highlighted.

Selecting a time range

new since VEGAS Pro 22

» Drag through the timeline with the right mouse button. Now you create a time selection.

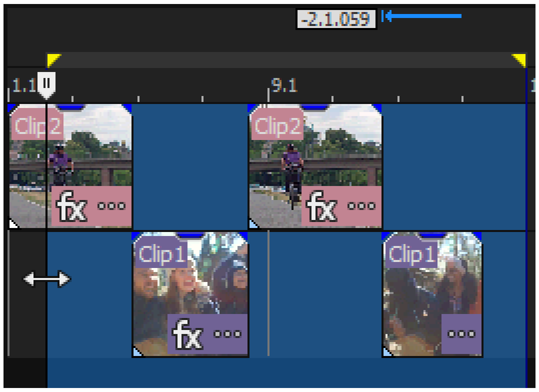


FIGURE *Time Selection with right mouse button*

Old Behavior:

- Click and drag along the marker bar, CD layout bar, time ruler, or a blank area of the timeline to select a time range. All events — and portions of events — within the region are highlighted.

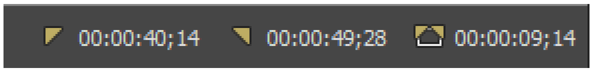
  Double-click an event and drag left or right to extend the selection to the next fade or event edge on that track.
- Dragging within an event will change the event's position on the timeline. To create time selection without moving the event, hold Ctrl+Shift while dragging.
- If the ALLOW EDIT CURSOR TO BE DRAGGED checkbox is selected on the General tab of the Preferences dialog, dragging the edit cursor will change its position on the timeline. To create a time selection without moving the cursor, hold Ctrl+Shift while dragging.
- When multiple events are selected, press Ctrl+Shift+[or Ctrl+Shift+] to create a time selection from the previous or next selected event.

Unless an event is locked, a selected time range affects all events—or portions of events—that occur within the range.

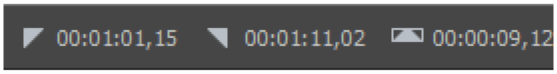
TIP To quickly select the full duration of the project, double-click the marker bar.

Editing the selection length

The current selection start, end, and length are displayed in the edit boxes below the timeline:



00:00:40;14 00:00:49;28 00:00:09;14



00:01:01,15 00:01:11,02 00:00:09,12

Double-click the boxes to edit them. You can enter timeline values, such as 00:00:25.381, or you can enter relative values by entering +/- and a number. For example, if the time ruler is displayed in frames, you could type +10 to add ten frames to the selection start, end, or length.

You can drag the ends of the time selection bar to adjust the selection length, or drag the middle of the bar to move the selection without changing its duration.

Selecting multiple adjacent events

Use this procedure to select multiple events that are located next to each other.

1. Hold the Shift key and click the first and last event that you want to select. The events, including those between the selected events, are highlighted.

   > **NOTE** To select all of the events in the project, choose SELECT from the Edit menu, and then choose SELECT ALL from the submenu.

2. When you have finished selecting events, release the Shift key.

Selecting multiple nonadjacent events

Use this procedure to select multiple events that are not located next to each other.

1. Hold the Ctrl key and click the events you want to select. The events are highlighted.

   > **NOTE** To deselect an event, simply click it again.

2. When you have finished selecting the events, release the Ctrl key.

Selecting all events

From the Edit menu, choose SELECT, and then choose SELECT ALL from the submenu (or press Ctrl+A) to select all tracks and events in your project.

Selecting all events to the end of a track

Right-click an event and choose SELECT EVENTS TO END from the shortcut menu. The event and all subsequent events on the same track are selected.

> **TIP** You can also use this command with events selected on multiple tracks.

Selecting all events after the cursor position

Choose SELECT ALL AFTER CURSOR from the Menu EDIT | SELECT or from a track's context menu to select all events under and after the current cursor position. You will be asked if you would like to select the event across ALL TRACKS or only on the SELECTED TRACKS.

Selecting all events that refer to a specific media file

1. Right-click a file in the Project Media window and choose SELECT TIMELINE EVENTS from the shortcut menu. The cursor moves to the first event that uses the media, the timeline scrolls to the cursor, and all events that use the selected media file in the active take are selected.

   For more information, see Using takes as alternate versions of events
2. Hold Ctrl or Shift while choosing SELECT TIMELINE EVENTS from the shortcut menu to add the events to the current selection.

> **TIP**
> - When multiple events are selected, press Ctrl to move the edge of the previous or next selected event.
> - When multiple events are selected, press Ctrl+Shift to create a time selection from the previous or next selected event.

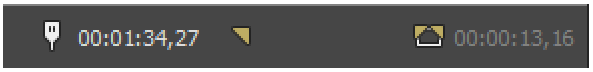
Selecting the start or end of an event for keyboard edge trimming

From the Edit menu, choose SELECT, and then choose SELECT EVENT START or SELECT EVENT END from the submenu (or press [or]) to select the start or end of an event and enter keyboard edge-trimming mode. For more information, see Adjusting an event's length

> **TIP** When multiple events are selected, press Ctrl+[or Ctrl+] to move the edge of the previous or next selected event.

Positioning the cursor

To set the cursor position, click in the timeline or time ruler. The cursor moves to the position you click, and the cursor position is displayed below the timeline.

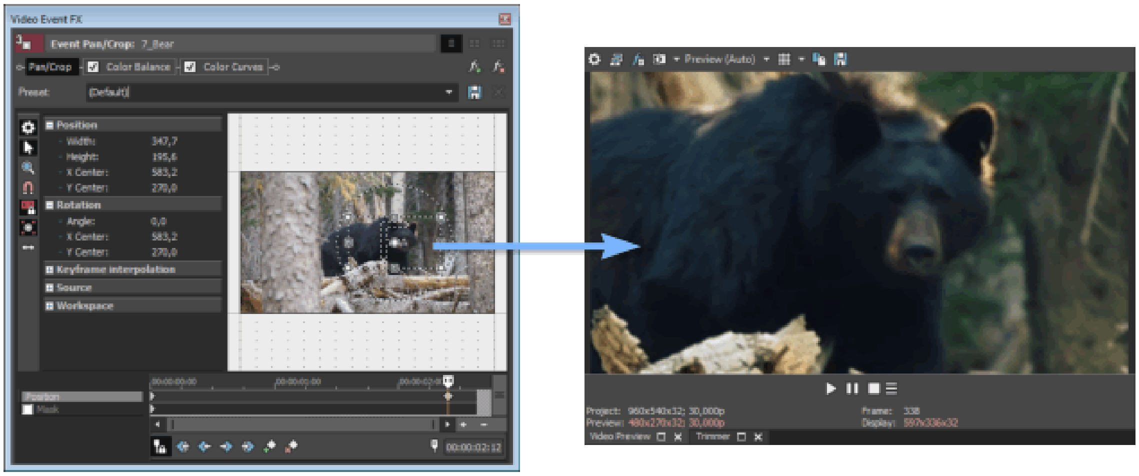

00:01:34,27
00:00:13,16

Panning and Cropping Video Events

Panning and cropping are essential techniques in VEGAS Pro that allow you to control the visible portion of a video event. Whether you want to zoom in on a subject, remove unwanted areas, or animate camera movements using still images, these tools offer flexible solutions. This topic gives you an overview of the two main methods: the OFX Crop plug-in and the Pan/Crop tool.

USE CASES

- Crop black borders from mobile footage or zoom in on a scene without complex tools.
- Create animated zoom effects using keyframes or pan across a still image to simulate motion.
- Design complex motion paths or use Bézier masks to isolate areas for effects.


Video Event FX
Event Pan/Crop: 7_Bear
Pan/Crop
Color Balance
Color Curves
Preset:
(Default)
Position
Rotation
Keyframe interpolation
Source
Workspace
Position
Mask
00:00:02:12
Preview (Auto)
Video Preview
Trimmer

Position
Width: 347,7
Height: 195,6
X Center: 583,2
Y Center: 270,0
Rotation
Angle: 0,0
X Center: 583,2
Y Center: 270,0

Project: 960x540x32; 30,000p
Preview: 480x270x32; 30,000p
Frame: 338
Display: 597x336x32

FIGURE *Cropping and panning preview*

Methods for Cropping and Panning

- **Crop with OFX plug-in:** The CROP OFX PLUG-IN, available in the VIDEO FX window, offers an intuitive way to crop using the Video Preview interact controls. It can be applied to *media, events, tracks, or the entire project*, and works best when used at the event or track level.
    - Quick and flexible cropping
    - Interactive handles in Video Preview
    - Applies across multiple tracks or clips
- **Pan/Crop tool:** The built-in PAN/CROP tool offers precise control over cropping, zooming, rotation, and panning. It supports *keyframe animation* and *masking* using shapes and Bézier curves.
    - Animated camera movement
    - Rotation and zooming over time
    - Shape-based masking and FX targeting

> **TIP**
> Both methods can be combined with keyframes for animation and with presets for reuse.

FURTHER INFORMATION

- Cropping Video Events with the OFX Plug-in
- Cropping a Video Event using the Pan/Crop Tool

Cropping Video Events with the OFX Plug-in

The Crop OFX plug-in offers a fast and intuitive way to crop video events directly in the Video Preview window. Unlike the Pan/Crop tool, this plug-in allows you to apply cropping at various levels—media, event, track, or project—and interactively adjust the crop using on-screen handles. Use it when you want to crop quickly, especially during early editing stages.

USE CASES

- Quickly remove unwanted borders or frame a subject more tightly.
- Apply consistent cropping across multiple events or tracks.
- Combine cropping with other OFX effects and keyframe animation.

Cropping an event using the Crop OFX plug-in

PREREQUISITE

- Ensure that at least one video event is placed on the timeline.

1. Open the VIDEO FX window.
2. In the left pane of the VIDEO FX window, locate and select the CROP effect.
3. Drag the DEFAULT preset onto the desired video event on the timeline.
4. Access the VIDEO EVENT FX window. Interactive crop handles appear in the VIDEO PREVIEW window.
5. Drag one of the crop handles toward the center of the preview area to crop the image.

   > **NOTE** The crop handles appear as small yellow dots at the edges of the selection area (left, top, right, bottom). When you drag a handle, the opposite one becomes the anchor point and is marked with a black dot. The handles may be hard to see at first, especially if no mouseover occurs.

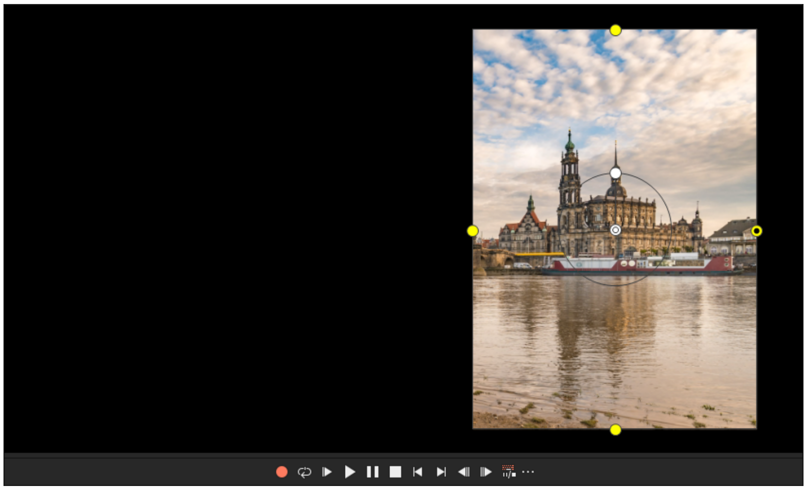
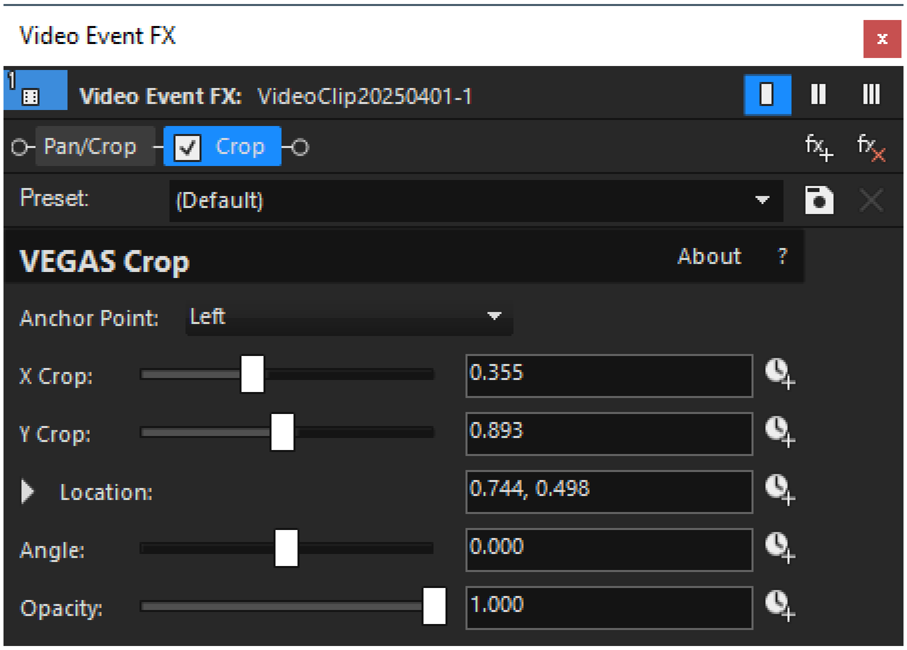


FIGURE *Interactive crop handles in the Video Preview window*

6. Alternative: Use the VIDEO EVENT FX window to set the crop parameters instead of dragging handles in the preview.
   - Set the crop using the controls in the VIDEO EVENT FX window.
   - Use the ANCHOR POINT dropdown and adjust the crop area using the X CROP and Y CROP sliders or text fields.
7. Reposition the cropped area by dragging it in the Preview window or entering values in the LOCATION field.
8. Rotate the selection by dragging the rotation control or adjusting the ANGLE slider.
9. Set the transparency using the OPACITY slider or text field.



Video Event FX: VideoClip20250401-1

Preset: (Default)

Anchor Point: Left

X Crop: 0.355

Y Crop: 0.893

Location: 0.744, 0.498

Angle: 0.000

Opacity: 1.000

FIGURE *Crop OFX plug-in interface in the Video Event FX window*

> **TIP**
> To animate the crop, click ANIMATE in the VIDEO EVENT FX window. Enable keyframes for all crop parameters before starting your animation. For more information, see Keyframe animation.

Crop OFX controls in the Video Event FX window

Control	Description
Anchor Point	Defines the fixed edge for the crop operation. When a handle is dragged, the anchor point determines which side stays in place. Default is RIGHT.
X Crop / Y Crop	Adjusts the horizontal and vertical crop amount. Use the sliders or enter numeric values to crop each axis independently.
Location	Moves the cropped area. Click and drag the box or enter values for horizontal and vertical offset (0.5 = center).
Angle	Rotates the cropped image. Use the slider or enter a rotation value in degrees.
Opacity	Sets the transparency of the cropped area. A value of 1.0 means fully visible; 0.0 means fully transparent.

FURTHER INFORMATION

- Keyframe animation
- Adding video effects

Cropping a Video Event using the Pan/Crop Tool

Use the Pan/Crop tool to manually adjust the visible area of a video event by cropping or zooming. This method provides timeline-based animation and advanced control over the event's frame, especially useful for still images or when creating camera movement effects. Unlike the Crop OFX plug-in, the Pan/Crop tool operates on the event level and includes a visual selection box.

USE CASES

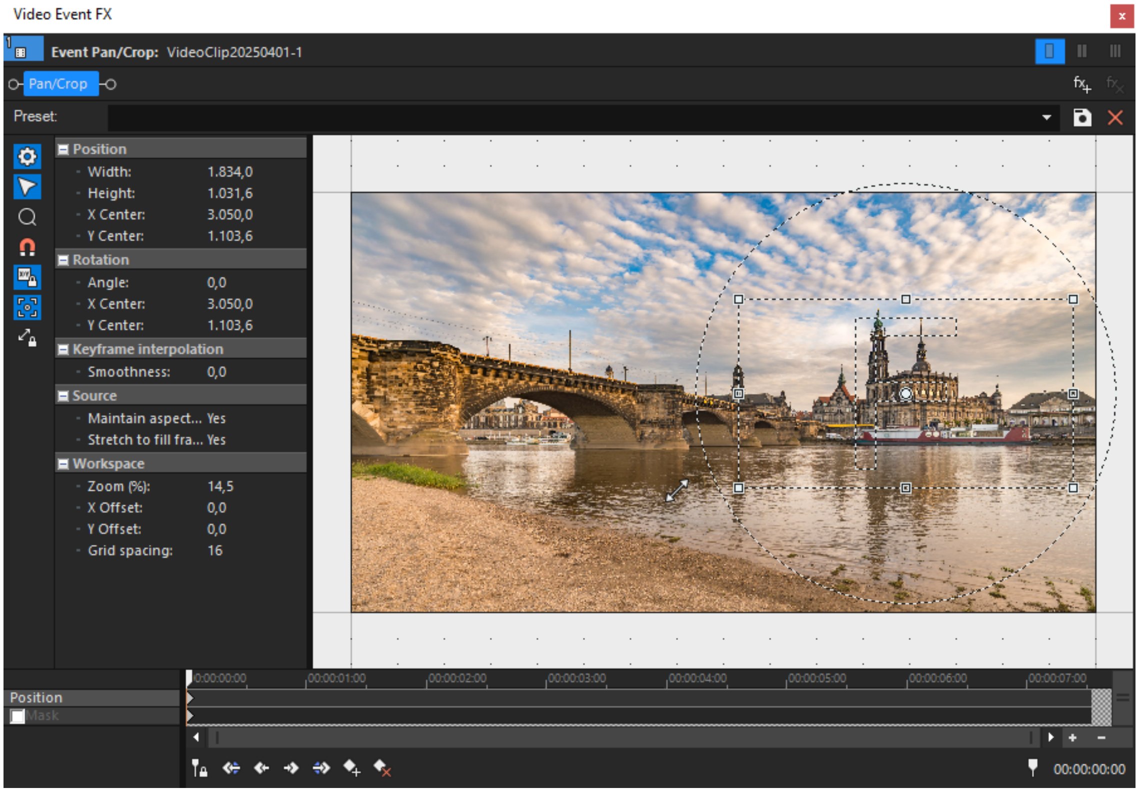
- Remove unwanted borders by cropping directly in the Pan/Crop window.
- Create motion from stills by zooming or positioning the selection box.
- Match project framing when aspect ratios differ between media and output.

Crop or zoom a video event

1. Select a video event on the timeline and click the PAN/CROP button in the event header.

   – or –

   From the TOOLS menu, choose VIDEO > VIDEO EVENT PAN/CROP.
2. The Pan/Crop window opens with a selection box overlaid on the video frame.


Video Event FX
Event Pan/Crop: VideoClip20250401-1
Pan/Crop
Preset:
Position
Mask
00:00:00:00
00:00:01:00
00:00:02:00
00:00:03:00
00:00:04:00
00:00:05:00
00:00:06:00
00:00:07:00
00:00:00:00

Position
Width: 1.834,0
Height: 1.031,6
X Center: 3.050,0
Y Center: 1.103,6
Rotation
Angle: 0,0
X Center: 3.050,0
Y Center: 1.103,6
Keyframe interpolation
Smoothness: 0,0
Source
Maintain aspect... Yes
Stretch to fill fra... Yes
Workspace
Zoom (%): 14,5
X Offset: 0,0
Y Offset: 0,0
Grid spacing: 16

FIGURE *Pan/Crop window with selection box for cropping a video event*

3. Resize the selection box by dragging the side or corner handles to crop the event.
4. Enable or disable the following options:
   - LOCK ASPECT RATIO: Keep the width-to-height ratio fixed when resizing.
   - SIZE ABOUT CENTER: Resize the selection from the center instead of the edge.
5. To zoom into the cropped area so it fills the output frame, open the SOURCE section and set STRETCH TO FILL FRAME to YES.
6. To reposition the selection, drag the box in the preview or enter values in the POSITION section using X CENTER and Y CENTER.

> **NOTE**
> Use the movement mode icons to restrict repositioning to horizontal or vertical directions. Choose from MOVE FREELY, MOVE IN X ONLY, or MOVE IN Y ONLY.

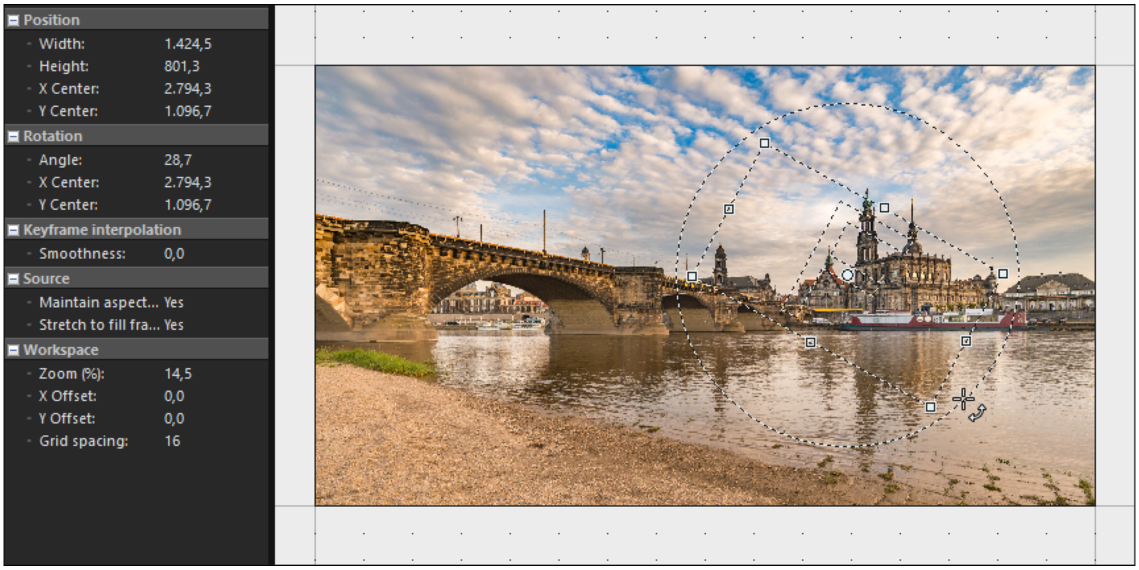
> **TIP** You can use keyframes to animate cropping or zooming over time. For details, see Pan/Crop Animations with Keyframes.

Rotating a video event using the Pan/Crop tool

The Pan/Crop tool also allows you to rotate a video event by adjusting the angle of the selection box. Rotation can be applied manually or numerically, and animated using keyframes.

Rotate a video event

1. Open the PAN/CROP window for the selected event.
2. Drag a corner of the selection box to rotate the visible content. The cursor changes to the rotate icon.



Position	
Width:	1.424,5
Height:	801,3
X Center:	2.794,3
Y Center:	1.096,7
Rotation	
Angle:	28,7
X Center:	2.794,3
Y Center:	1.096,7
Keyframe interpolation	
Smoothness:	0,0
Source	
Maintain aspect...	Yes
Stretch to fill fra...	Yes
Workspace	
Zoom (%):	14,5
X Offset:	0,0
Y Offset:	0,0
Grid spacing:	16

FIGURE *Rotated selection box in the Pan/Crop window*

3. To set a specific angle, open the ROTATION section and enter a value in the ANGLE field.
4. To rotate around a custom point, change the X CENTER and Y CENTER values in the same section.

> **TIP** Rotation can be combined with cropping and keyframes to create dynamic visual effects. See Pan/Crop Animations with Keyframes.

Further information

- Pan/Crop Animations with Keyframes
- Pan/Crop Dialog Controls

Creating masks using the Pan/Crop tool

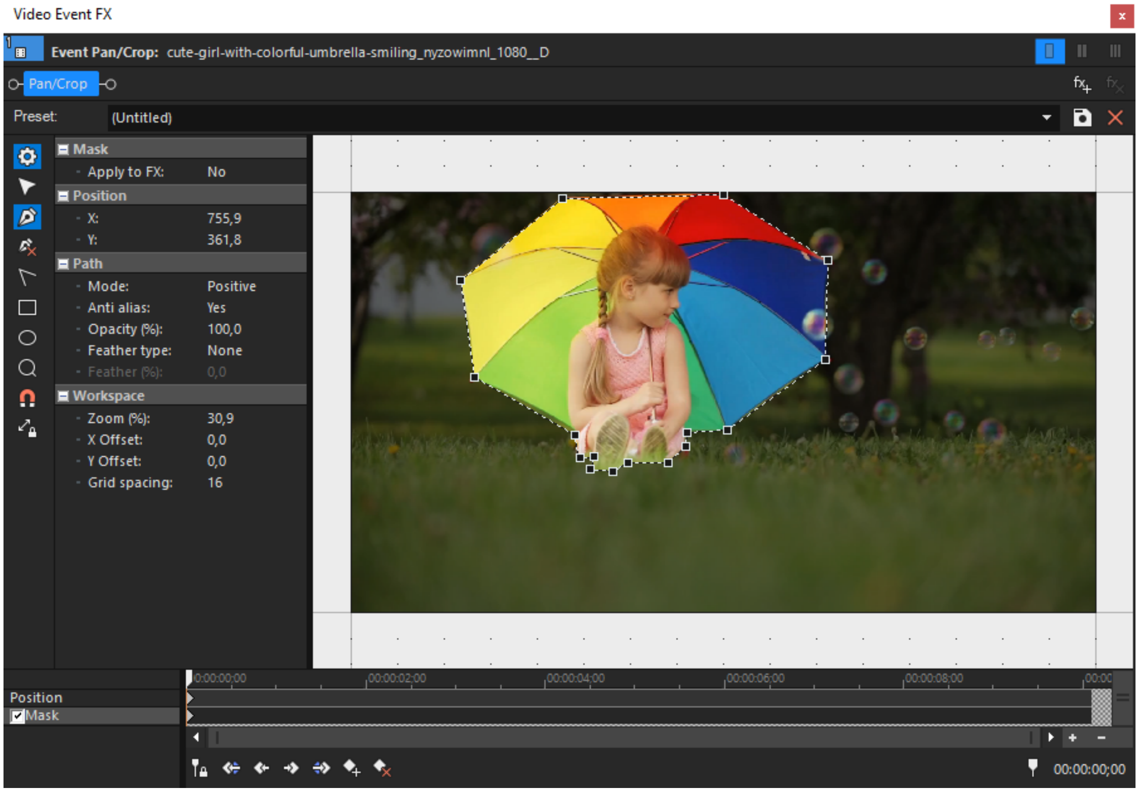
The Pan/Crop tool allows you to create masks that define which parts of a video event are visible or affected by video effects. You can use Bézier curves or shape tools to isolate areas of the frame, apply feathering, and combine multiple masks for complex results.

USE CASES

- Blur a face or object by combining a mask with the Pixelate effect.
- Highlight or isolate areas of a frame while dimming or removing the background.
- Create custom transparency and visibility areas based on animated masks.

Create a Bézier mask

1. Select the video event and open the PAN/CROP window.
2. Enable the MASK checkbox in the keyframe controller.
3. In the left panel, expand the PATH section and use the ANCHOR CREATION TOOL to define a shape.
4. Click to create anchor points and close the path to complete the shape.
5. For next steps on how to apply an effect to the masked area, see Creating masks using the Pan/Crop tool.



Event Pan/Crop: cute-girl-with-colorful-umbrella-smiling_nyzowimnl_1080__D

Preset: (Untitled)

Mask
Apply to FX: No
Position
X: 755,9
Y: 361,8
Path
Mode: Positive
Anti alias: Yes
Opacity (%): 100,0
Feather type: None
Feather (%): 0,0
Workspace
Zoom (%): 30,9
X Offset: 0,0
Y Offset: 0,0
Grid spacing: 16

FIGURE *Bézier mask drawn in the Pan/Crop window*

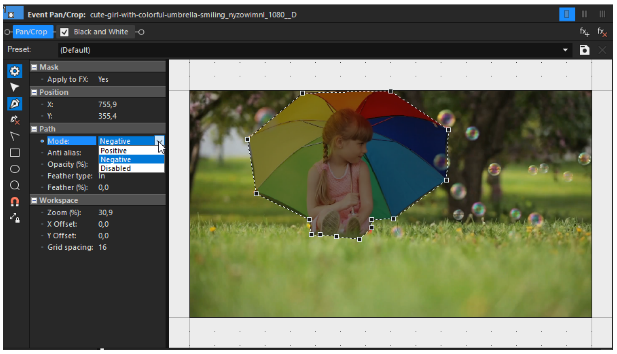
Create a rectangular or oval mask

1. Click the RECTANGLE MASK or OVAL MASK tool on the left side of the Pan/Crop window.
2. Click and drag on the workspace to draw the mask.
3. Use keyboard modifiers while dragging:
    - `Shift`: Constrain to square or circle
    - `Ctrl`: Draw from center
    - `Alt`: Create half-oval or rounded corners
4. For next steps on how to apply an effect to the masked area, see Creating masks using the Pan/Crop tool.

Apply a mask to effects

1. In the PAN/CROP window, go to the PATH section and choose **Positive** or **Negative** from the MODE dropdown.
2. Click the FX+ button (Plug-in Chain) to open the VIDEO EVENT FX window and add a video effect.
3. In the MASK section, set APPLY TO FX to **Yes** to restrict the effect to the masked area.

> **NOTE**
> When APPLY TO FX is set to NO, the mask affects the visible frame, not the applied effect.



Event Pan/Crop: cute-girl-with-colorful-umbrella-smiling_nyzowimnl_1080__D

Preset: (Default)

Mask
- Apply to FX: Yes

Position
- X: 755,9
- Y: 355,4

Path
- Mode: Negative
- Anti alias:
- Opacity (%):
- Feather type: In
- Feather (%): 0,0

Workspace
- Zoom (%): 30,9
- X Offset: 0,0
- Y Offset: 0,0
- Grid spacing: 16

FIGURE *Mask settings in Pan/Crop*

EXAMPLE

Blur a face using a mask

1. Open the PAN/CROP window for the video event.
2. Enable the MASK checkbox.
3. Select the OVAL MASK tool and draw a mask over the face.
4. Apply the PIXELATE video effect to the event.
5. In the MASK section, enable APPLY TO FX.
6. Adjust the mask position and feathering to refine the result.

Edit a mask

1. Double-click the mask in the PAN/CROP window to edit it.
2. Drag the mask to reposition it or use handles to scale or rotate.

3. Use the toolbar icons near the mask for quick edits:
   - **Positive / Negative** – Define the visible area direction.
   - **Feather Inside / Outside / Both** – Soften the mask edge.

> **TIP** You can also choose POSITIVE or NEGATIVE from the MODE drop-down list in the PATH section on the left side of the Pan/Crop window.

4. Use the context menu to manage the mask:
   - **Reset Mask** – Resets the current mask to its default shape.
   - **Select / Deselect** – Toggles selection status.
   - **Delete** – Removes the mask.
   - **Initialize / Hide / Split Tangents** – Adjust Bézier handle behavior.
   - **Flip Horizontal / Vertical** – Mirrors the shape.
   - **Duplicate** – Creates a copy (or use `Ctrl` + drag).

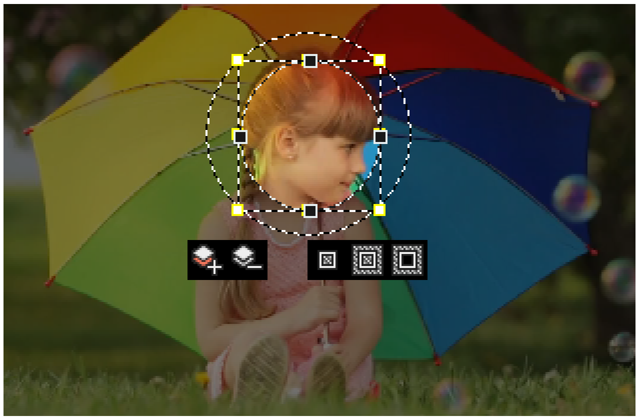


FIGURE *Mask editing options in the Pan/Crop window*

Further information

- [Cropping a Video Event using the Pan/Crop Tool]

Pan/Crop Animations with Keyframes

Pan/Crop animations in VEGAS Pro are based on keyframes. These keyframes store changes to cropping, zoom, rotation, or position over time. You can manually set keyframes or use presets to apply pre-defined animation curves.

USE CASES

- Create smooth zoom-in effects on a still image
- Apply panning across a wide shot to follow action
- Store common framing positions as reusable presets

Panning a video event

Use panning to move the visible area of a video event across the frame. This is useful for still images, widescreen shots, or Pan-and-Scan techniques. The following steps show how to set up and animate panning using the Pan/Crop tool.

1. Select a video event on the timeline and open the Pan/Crop window by clicking the PAN/CROP button in the event header – or choose VIDEO > VIDEO EVENT PAN/CROP from the TOOLS menu.
2. Adjust the size of the selection box by dragging the handles or entering values in the POSITION section.
3. Enable LOCK ASPECT RATIO to constrain proportions, or SIZE ABOUT CENTER to scale symmetrically.
4. Move the selection box to the desired start position by dragging it or typing coordinates for X CENTER and Y CENTER.
5. Enable one of the movement modes in the toolbar:
    - MOVE FREELY: move on both axes
    - MOVE IN X ONLY: restrict movement to horizontal
    - MOVE IN Y ONLY: restrict movement to vertical

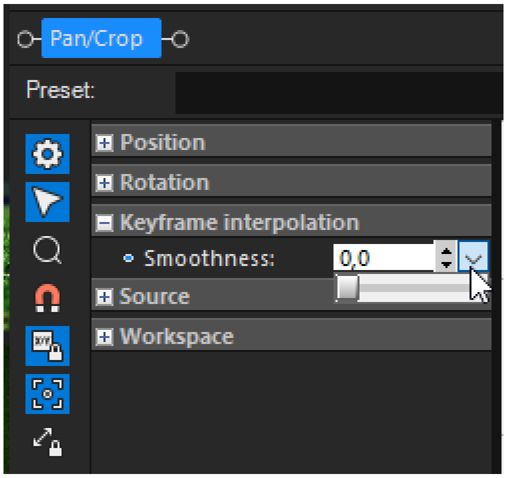
6. To animate the motion, add a new keyframe later on the timeline and adjust the position again. VEGAS will interpolate the movement path between keyframes.
7. Use the SMOOTHNESS slider in the KEYFRAME INTERPOLATION section to adjust the curve of the motion.

> **TIP**
> This method is commonly used in Pan-and-Scan workflows to convert widescreen content for standard formats. It helps to follow the subject and maintain visual balance.

Editing keyframe interpolation

If you have two or more keyframes, VEGAS interpolates the motion between them. You can change the behavior of that interpolation using the SMOOTHNESS setting in the KEYFRAME INTERPOLATION section.

You can find this setting in the left pane of the Pan/Crop window under KEYFRAME INTERPOLATION.



Smoothness: 0,0

FIGURE *Smoothness slider in the Pan/Crop plug-in*

Setting	Description
SMOOTHNESS = 0	Linear motion without acceleration (constant speed).
SMOOTHNESS > 0	Creates a smooth, curved path between keyframes with ease-in/ease-out behavior.

> **NOTE**
> Adjusting the smoothness controls how the video moves between keyframes, but not the actual keyframe positions.

Change the interpolation type of a keyframe

1. Right-click a keyframe in the timeline at the bottom of the Pan/Crop window.
2. From the context menu, choose an interpolation type such as LINEAR, FAST, SLOW, SMOOTH, SHARP, or HOLD.

> **NOTE**
> Interpolation types affect how motion progresses over time between keyframes. For example, SLOW eases into the keyframe, while HOLD freezes the state until the next keyframe.

Saving and recalling keyframe presets

VEGAS allows you to save and reuse keyframe animations as presets. This helps you maintain consistency across multiple events or projects.

1. Create one or more keyframes in the timeline of the Pan/Crop window.
2. Type a name into the PRESET field.
3. Click the SAVE PRESET button to store the animation.

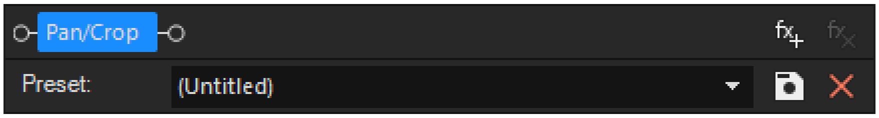


FIGURE *Preset field and save button in the Pan/Crop plug-in*

To recall or delete a preset

1. Select a keyframe row (Position or Mask) in the Pan/Crop window.
2. Choose a saved preset from the PRESET drop-down list.
3. To delete the current preset, click the DELETE PRESET button.

> **NOTE**
> Presets are saved per keyframe row. For example, Position and Mask presets are stored independently.

Further information

- Keyframe animation
- Cropping a Video Event using the Pan/Crop Tool

Cropping to the Project Aspect Ratio

When your source video has a different aspect ratio than your project settings, black bars may appear. To fix this, you can crop your video manually or enable automatic cropping in preferences.

> **USE CASES**
> - Remove black bars from portrait or landscape video
> - Ensure consistent framing across different aspect ratios
> - Prepare video content for widescreen output

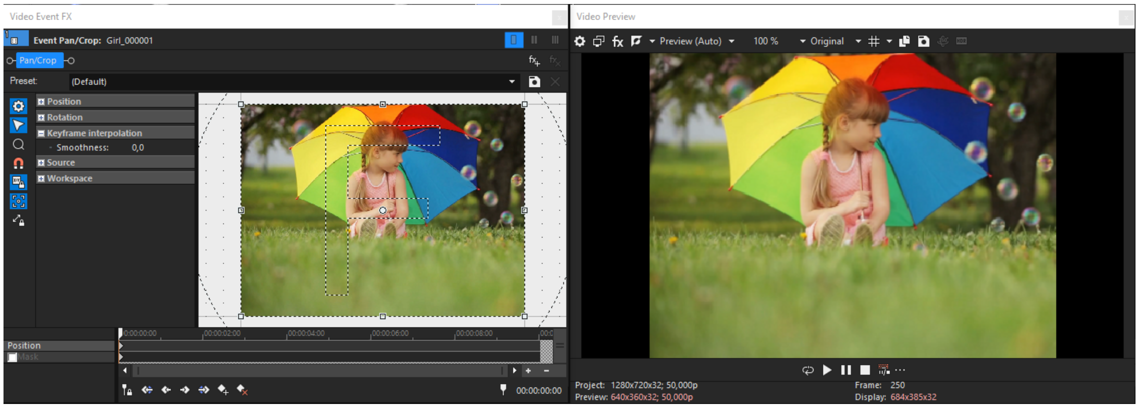
Crop manually using the Pan/Crop tool

1. Select the video event on the timeline.
2. Open the PAN/CROP window.
3. Right-click inside the Pan/Crop workspace and choose MATCH OUTPUT ASPECT.

> **TIP**
>
> If you want to restore the original shape of the media, choose MATCH SOURCE ASPECT instead.

4. Adjust the crop box if needed to preserve important content.

   You can also adjust the STRETCH TO FILL FRAME or MAINTAIN ASPECT RATIO options in the Pan/Crop Dialog Controls for fine-tuning.



Video Event FX
Event Pan/Crop: Girl_000001
Pan/Crop
Position
Rotation
Keyframe interpolation
Source
Workspace
Mask
Video Preview
Preview (Auto)
100 %
Original

Preset: (Default)

Smoothness: 0,0

00:00:00:00

Project: 1280x720x32; 50,000p
Preview: 640x360x32; 50,000p

Frame: 250
Display: 684x385x32

FIGURE *Pan/Crop window showing video with black bars*

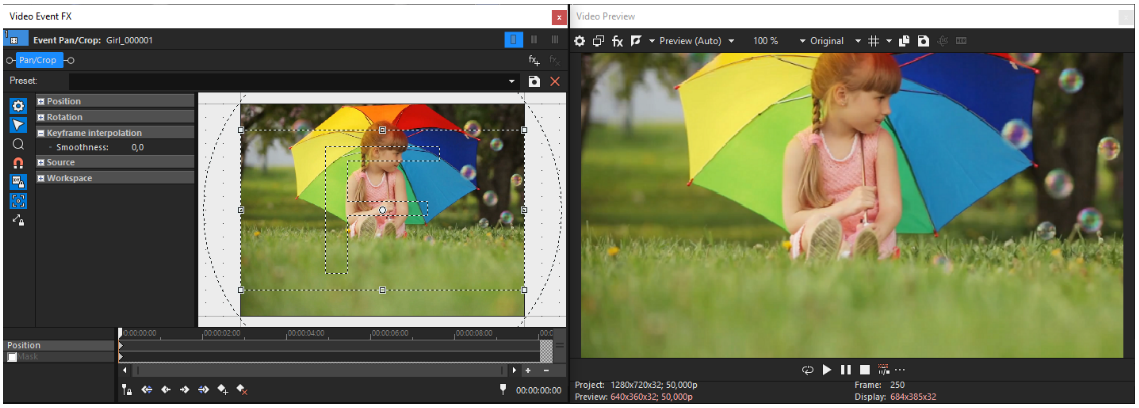

Video Event FX
Event Pan/Crop: Girl_000001
Pan/Crop
Preset:
Position
Rotation
Keyframe interpolation
Smoothness: 0,0
Source
Workspace
Position
Mask
00:00:00:00
Video Preview
Preview (Auto)
100 %
Original
Project: 1280x720x32; 50,000p
Preview: 640x360x32; 50,000p
Frame: 250
Display: 684x385x32

FIGURE *Pan/Crop window after applying Match Output Aspect*

> **TIP** Matching the output aspect ratio helps avoid black bars when mixing portrait and landscape video in one project.

Enable automatic cropping for new media

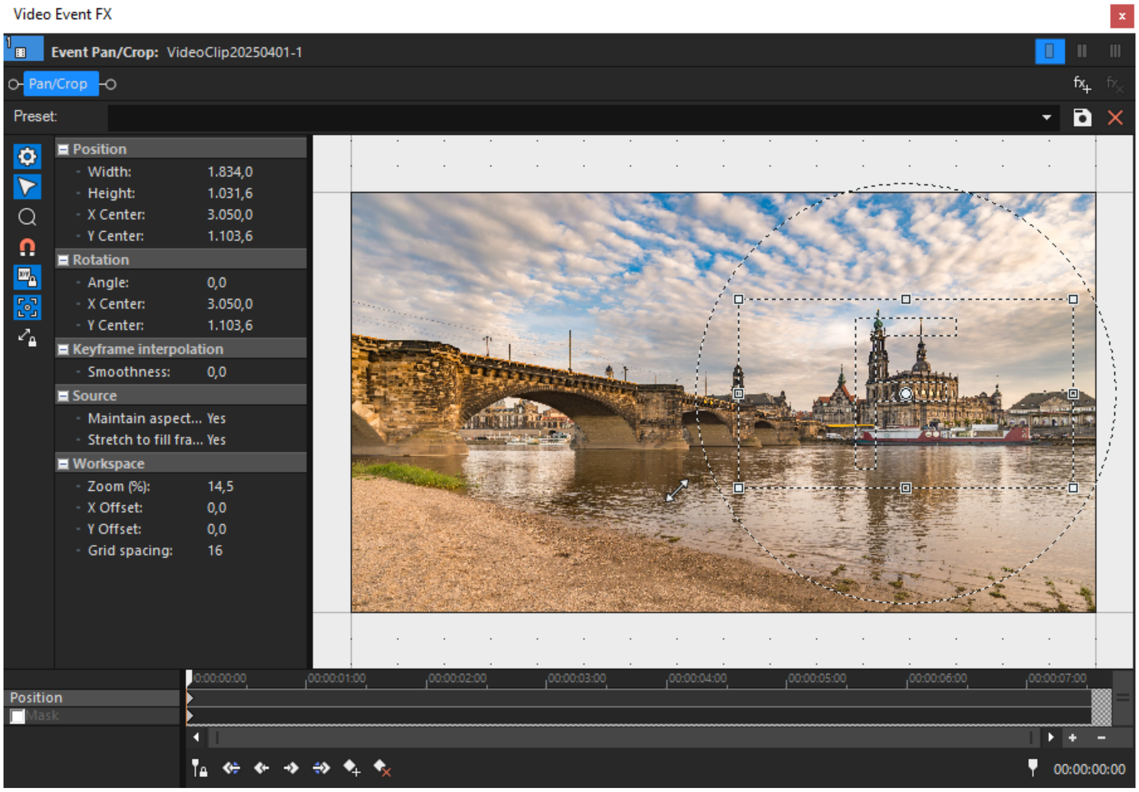
1. Go to OPTIONS > PREFERENCES.
2. Select the EDITING tab.
3. Check the box AUTOMATICALLY CROP VIDEO FILES ADDED TO THE TIMELINE.
4. Click OK to apply the setting.

Further information

- Cropping a Video Event using the Pan/Crop Tool
- Editing Tab

Pan/Crop Dialog Controls

The Pan/Crop window contains a set of tools and properties for cropping, zooming, rotating, and masking video events. When masking is enabled, additional controls appear for creating and adjusting Bézier shapes.


Video Event FX
Pan/Crop
00:00:00:00
00:00:01:00
00:00:02:00
00:00:03:00
00:00:04:00
00:00:05:00
00:00:06:00
00:00:07:00
Position
Mask
00:00:00:00

Event Pan/Crop: VideoClip20250401-1

Preset:

Position
- Width: 1.834,0
- Height: 1.031,6
- X Center: 3.050,0
- Y Center: 1.103,6

Rotation
- Angle: 0,0
- X Center: 3.050,0
- Y Center: 1.103,6

Keyframe interpolation
- Smoothness: 0,0

Source
- Maintain aspect... Yes
- Stretch to fill fra... Yes

Workspace
- Zoom (%): 14,5
- X Offset: 0,0
- Y Offset: 0,0
- Grid spacing: 16

FIGURE *Pan/Crop dialog with standard properties view (masking disabled)*

Toolbar

Icon	Tool	Description
⚙	Show properties	Opens properties for the Pan/Crop workspace.
➤	Normal Edit Tool	Select and manipulate items in the workspace such as masks or selection boxes.
🔍	Zoom Edit Tool	Zoom in and out of the Pan/Crop workspace. Left-click to zoom in, right-click to zoom out.
🧲	Enable Snapping	Enable or disable snapping to grid lines when moving or resizing objects.
X:Y	Lock Aspect Ratio	Preserve the aspect ratio when resizing the selection box. Hold `Ctrl` while resizing to temporarily override the locked aspect ratio.
⊙	Size About Center	Resize the selection box symmetrically around its center. Hold `Alt` while resizing to temporarily override center scaling.
⤢	Move Freely (X or Y)	Move the selection box freely along both the horizontal (X) and vertical (Y) axes.

Properties

Section	Control	Description
Position	Width / Height	Defines the size of the selection box. Adjust manually or enter numeric values.
	X Center / Y Center	Specifies the position of the selection box in the frame.
Rotation	Angle	Sets the rotation angle of the selection box.
	X Center / Y Center	Defines the pivot point around which rotation occurs.
Keyframe Interpolation	Smoothness	Controls the curvature of motion paths between keyframes for smoother animations.
Source	Maintain aspect ratio	Preserves the aspect ratio of the source media when scaling.
	Stretch to fill frame	When enabled, the selection fills the output frame. Otherwise, cropping occurs.
Workspace	Zoom	Adjusts the zoom level of the workspace for more precise editing.
	X Offset / Y Offset	Offsets the display horizontally or vertically within the Pan/Crop window.
	Grid spacing	Sets the distance between grid lines for alignment and precision.
Mask	Apply to FX	Determines whether the applied effect is masked by the current mask shape.
Path	Mode	Sets the mask polarity: Positive masks inside, Negative masks outside the shape.
	Anti alias	Enables edge smoothing to reduce jagged lines.
	Opacity (%)	Defines the transparency level of the mask.
	Feather type	Defines how the mask edge is softened (Inside, Outside, Both).
	Feather (%)	Specifies how much edge softness is applied.

Toolbar functions for mask editing

Icon	Tool	Description
✒	Anchor Creation Tool	Draw a custom Bézier mask by clicking or dragging to create path points.
✒✕	Anchor Deletion Tool	Remove a point from a Bézier mask path by clicking on it.
⬉	Split Tangent Tool	Select and modify points in a Bézier path, including handles and curvature.
▣	Rectangle or Square Mask Creation Tool	Draw a rectangular mask shape. Hold Shift to constrain the shape to a square.
⬭	Oval or Circle Mask Creation Tool	Draw an oval mask shape. Hold Shift to constrain the shape to a circle.

Further information

- Pan/Crop Animations with Keyframes
- Creating masks using the Pan/Crop tool
- Cropping a Video Event using the Pan/Crop Tool
- Cropping to the Project Aspect Ratio

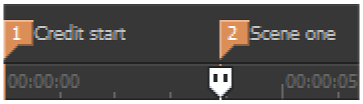
Using markers, regions, and commands

Markers and regions serve as reference points along the VEGAS® Pro timeline and help arrange events on the timeline. You can use markers for annotations, to insert metadata commands, or to mark track and index entries for a disc-at-once CD project.

Inserting markers

Click the INSERT MARKER button on the editing toolbar or choose INSERT | MARKER to add a marker at the cursor position. Markers can be used to indicate points of interest in projects or to make notes in the project.

If you choose to save markers in your rendered MPEG-2 file, DVD Architect™ will read those markers as chapter markers. Ensure the RENDER I-FRAMES AT MARKERS checkbox is selected before rendering (in the Render As dialog, choose MAINCONCEPT MPEG-2 from the TEMPLATE box, and then click the CUSTOM button. In the Custom Template dialog, select the Video tab and select the RENDER I-FRAMES AT MARKERS check box).



> **TIP** Each marker (up to 99) is assigned a number. Pressing this number on the keyboard moves the cursor to the corresponding marker.

Inserting a marker

1. Position the cursor where you want to add a marker.
2. Click the INSERT MARKER button on the editing toolbar or choose INSERT | MARKER. A marker will be added at the cursor position and an edit box is displayed.
3. Type a name for the marker in the edit box and press Enter.

> **TIP** You can also insert markers during playback by pressing the M key.

Naming or renaming a marker

Right-click the marker tag 1 and choose RENAME from the shortcut menu. Type the name of the marker in the edit box and press Enter when you're finished.

—or—

Double-click to the right of the marker and type a name in the edit box.

Moving a marker

Drag the marker tag 1 to a new location.

> **TIP** Hold Shift while dragging to temporarily override the current snapping setting.

Deleting a marker

Right-click the marker tag 1 and choose DELETE from the shortcut menu.

Deleting all markers and regions from your project

Right-click a blank area of the Marker Bar, choose MARKERS/REGIONS, and choose DELETE ALL from the submenu. All markers 1 and regions 1 in the project are removed.

Deleting all markers within the selected area

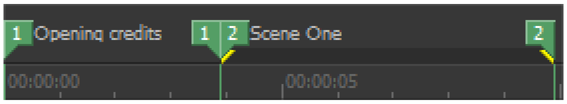
Right-click above the loop region, choose MARKERS/REGIONS, and choose DELETE ALL IN SELECTION from the submenu. All markers 1 and regions 1 in the selected area are removed.

Moving the cursor to a marker

Click the marker tag .

Inserting regions

Click the INSERT REGION button on the editing toolbar (or choose INSERT | REGION) to add region tags at each end of the current selection. Regions can be used to indicate sections of projects such as credits or scenes, or they can be used to make notes in the project.



> **TIP** Each region (up to 99) is assigned a number. Pressing this number on the keyboard selects the corresponding region.

Inserting a region

1. Drag the cursor in the timeline or marker bar to make a time selection.
2. Click the INSERT REGION button on the editing toolbar (or choose INSERT | REGION. Numbered region tags are placed at the start and end of the selected area, and an edit box is displayed.
3. Type a name for the region in the edit box and press Enter.

Moving the cursor to a region tag

Click a region tag .

> **TIP** To move the cursor to the start or end of a region, right-click either region tag and choose GO TO START or GO TO END from the shortcut menu.

Deleting a region

Right-click either region tag and choose DELETE from the shortcut menu.

Deleting all markers and regions in project

Right-click a blank area of the marker bar, choose MARKERS/REGIONS from the shortcut menu, and choose DELETE ALL from the submenu. All regions and markers in the project are removed.

Deleting all markers and regions within a selected area

1. Drag along the marker bar to highlight the area you want all markers and regions to be removed from.
2. Right-click a blank area of the marker bar, choose MARKERS/REGIONS from the shortcut menu, and choose DELETE ALL IN SELECTION from the submenu. All regions and markers inside the selected area are removed.

Naming or renaming a region

Right-click the starting region tag and choose RENAME from the shortcut menu.

—or—

Double-click to the right of the region tag and enter a name in the edit box.

Selecting a region

Right-click the starting or ending region tag 1 and choose SELECT REGION from the shortcut menu. The region is highlighted.

—or—

Double-click the start or end region tag. The region is highlighted.

Moving a region

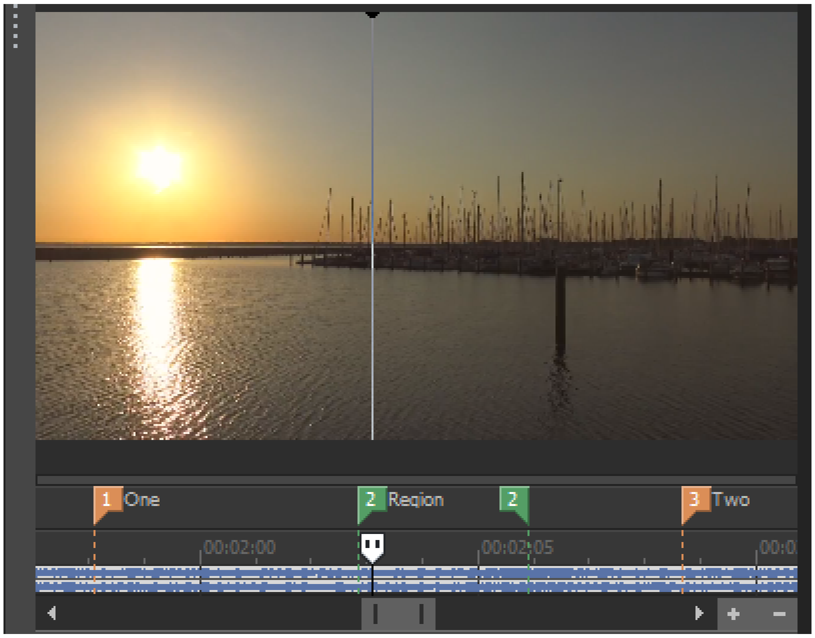
Drag either region tag 1 to move the tab and change the region's size.

Hold the Alt key while dragging either region tag to move a region and preserve its length.

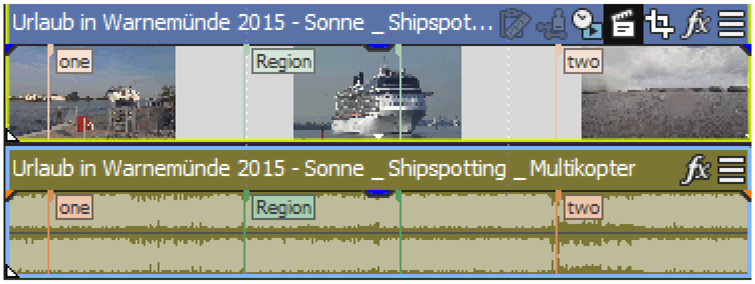
Using media markers and regions

From the View menu, choose EVENT MEDIA MARKERS to toggle the display markers (including XDCAM essence marks) and regions that are saved in a media file. These markers are displayed in the timeline in events that refer to the media file.

Media markers and regions cannot be edited within the event. However, when you edit the markers in markers and regions in the Trimmer window or in an external audio editor, the event will reflect your changes.


1 One
2 Region
2
3 Two
00:02:00
00:02:05
00:0

Media markers/regions visible in Trimmer window


Urlaub in Warnemünde 2015 - Sonne _ Shipspot...
one
Region
two
Urlaub in Warnemünde 2015 - Sonne _ Shipspotting _ Multikopter
one
Region
two

Media markers/regions displayed in event

TIP

- From the View menu, choose EVENT MEDIA MARKERS, and then choose SHOW MARKER LABELS from the submenu to toggle the display of marker labels in events.
- When media markers are displayed, you can use them as snap points for positioning the cursor and for edge-trimming if SNAP TO MARKERS is selected on the Options menu. If a media file's frame rate does not match your project frame rate, frame quantization will occur after the snap if QUANTIZE TO FRAMES is selected on the Options menu. For more information, see Adjusting an event's length and Enable snapping

Inserting command markers

From the Insert menu, choose COMMAND to place a metadata command marker on the command bar.

Command markers indicate when an instruction (function) will occur in a streaming media file. You can use command markers to display headlines, captions, link to Web sites, or any other function you define.

IMPORTANT Windows Media Player 9 and later will ignore metadata commands unless the RUN SCRIPT COMMANDS WHEN PRESENT checkbox is selected on the Security tab of the player's Preferences dialog. Be sure to instruct your audience to select this checkbox before playing your file.

Inserting a command marker

1. Place the cursor where you want to insert the command marker.
2. From the Insert menu, choose COMMAND. The Command Properties dialog is displayed.
3. From the COMMAND drop-down list, choose the type of command you want to insert, or type a custom command in the box.

4. In the PARAMETER box, type the argument that should be passed to the command. For example, if you're using an URL command, type the address of the Web page you want to display.

Command	Player Type	Description
URL	Windows Media	Indicates when an instruction is sent to the user's Internet browser to change the content being displayed. In the PARAMETER box, type the URL that will display at a specific time during the rendered project's playback.
Text	Windows Media	Displays text in the captioning area of the Windows Media Player located below the video display area. In the PARAMETER box, type the text that will display during playback. **NOTE** To view captions during playback in Windows Media Player 9, choose CAPTIONS AND SUBTITLES from the Windows Media Player Play menu, and then choose ON IF AVAILABLE from the submenu.
WMClosedCaption	Windows Media	Displays the text from the PARAMETER box in the captioning window that is defined by an HTML layout file.
WMTextBodyText	Windows Media	Displays the text from the PARAMETER box in the text window that is defined by an HTML layout file.
WMTextHeadline	Windows Media	Displays the text from the PARAMETER box in the headline window that is defined by an HTML layout file.

Command	Player Type	Description
Scott EOM	Scott Studios WAV file	Calculates when the next queued clip starts playing in a Scott Studios system. For more information, please refer to your Scott Studios documentation.
Scott Cue In	Scott Studios WAV file	Set the beginning of a file in a Scott Studios System without performing destructive editing. For more information, please refer to your Scott Studios documentation.

Command	Player Type	Description
608CC1	—	Used for primary-language closed captions. In the COMMENT box, type the closed caption control commands. **TIP** ● If you type captioning text in the COMMENT box and do not specify captioning markup, a pop-on caption is created. ● You can use your keyboard to create standard text and punctuation. To insert special characters and punctuation, use the Character Map (START | ALL PROGRAMS | ACCESSORIES | SYSTEM TOOLS | CHARACTER MAP). For more information about closed captioning, see [Adding closed captioning to video files]()
608CC3	—	Used for secondary-language closed captions. In the COMMENT box, type the closed caption control commands.

5. In the COMMENT box, type any comments you want to associate with the command. A comment is generally used to remind you of what the command is while you work on the project; its function is similar to naming markers and regions.

6. In the POSITION box, type the time you want the command to occur in your project. VEGAS Pro inserts at the cursor position by default.

Deleting a command marker

Right-click the command marker tag and choose DELETE from the shortcut menu.

Editing a command marker

Right-click the command marker tag and choose EDIT from the shortcut menu.

—or—

Double-click the command marker tag.

Moving the cursor to a command marker

Click the command marker tag.

Using command templates

If you frequently insert commands that use similar settings, you can create a template to insert command settings automatically.

Creating a template

1. From the Insert menu, choose COMMAND to display the Command Properties dialog.
2. Type the settings you want to use in the COMMAND, PARAMETER, COMMENT, and POSITION boxes.
3. In the TEMPLATE box, type the name you want to use to store the template.
4. Click the SAVE button.

Recalling a template

1. From the Insert menu, choose COMMAND to display the Command Properties dialog.

2. Choose the template you want to use from the TEMPLATE drop-down list. VEGAS Pro fills in the COMMAND, PARAMETER, COMMENT, and POSITION boxes using the information stored in the template.
3. Edit the settings in the COMMAND, PARAMETER, COMMENT, and POSITION boxes as necessary.
4. Click OK.

Editing metadata commands

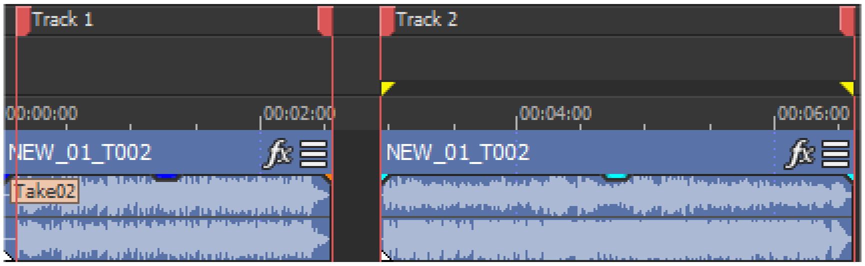
VEGAS Pro saves your metadata command templates in the CMDTEMP.XML file in the C:\Users\<username>\AppData\Roaming\Vegas\VEGAS Pro\23 folder. You can edit this file directly to modify your templates.

Inserting CD track regions

From the Insert menu, choose AUDIO CD TRACK REGION to add a region using the current selection at the cursor position. CD track regions are used for creating an audio CD track list for burning Red Book audio CDs. For more information, see [Disc-at-once (DAO or Red Book) CD Burning]

If your first track region begins before 00:00:02:00, a timeline offset is automatically added so the first track begins at exactly two seconds.

> **NOTE** CD track numbering is based on the FIRST TRACK NUMBER ON DISC setting on the Audio CD tab in the Project Properties dialog. For more information, see [Setting project properties]



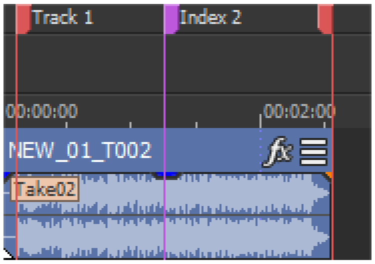
TIP

- From the Options menu, choose QUANTIZE TO FRAMES to turn off frame quantization before creating a CD layout. For more information, see [Quantize to frames]()
- Double-click a region tag to select the duration of the track.
- Press Ctrl+Period to seek to the next track.
- Press Ctrl+Comma to seek to the previous track.

Inserting CD index markers

From the Insert menu, choose AUDIO CD TRACK INDEX to add an index marker at the cursor position.

You can use indices to subdivide a track. For example, a track could contain an orchestral composition, and index markers could allow navigation to each of the movements. Each track on a Red Book audio CD can contain up to 99 index markers. For more information, see [Disc-at-once (DAO or Red Book) CD Burning]()



TIP

- Press Period to seek to the next track or index marker.
- Press Comma to seek to the previous track or index marker.

The Marker Tool

You can use the marker tool to navigate the marker bars and edit multiple selected markers.

1. Click the MARKER TOOL button in the top-right corner of the timeline.
2. Select the markers you want to edit:
   - Press the Left Arrow/Right Arrow keys to move to the previous/next marker in the active bar (marker/region bar, CD layout bar, or command bar).
   - Press Shift+Left Arrow/Right Arrow keys to extend the selection to the previous/next marker.
   - Press `Shift` while clicking two marker tags to select all markers between the two tags.
   - Press `Ctrl` while clicking marker tags to select or deselect individual markers.
3. Edit your markers:
   - Dragging any selected marker will move all selected markers in the active bar as a group.
   - Pressing Delete will remove all selected markers in the active bar.

   The marker tool is inactive when you change focus to another portion of the VEGAS Pro window.

Moving events

An event's position on the timeline determines where it will be played in your project. You can use snapping to help you align events to the grid, frame boundaries, or markers. For more information, see Enable snapping

> **NOTE** When the ALLOW EDIT CURSOR TO BE DRAGGED checkbox is selected on the General tab of the Preferences dialog, dragging the cursor changes its position on the timeline. If you want to drag an event, click a portion of the event that is not beneath the cursor before dragging. For more information, see General Tab

Dragging an event to a new position

Dragging is the simplest way to move events in your project. You can drag an event so it occurs earlier or later in your project, or you can drag it to another track.

> **TIP** You can also use keyboard shortcuts to move events. Press 1 or 3 on the numeric keypad to move one frame left or right, or press 4 or 6 on the numeric keypad to move one pixel left or right. For more information, see Keyboard shortcuts

1. Click an event and hold the mouse button.
2. Drag the event to the position where you want it to be played.

   > **NOTE**
   > - If you drag an event so that it overlaps another event, a crossfade is inserted to transition smoothly between the two events. For more information, see Automatic crossfades
   > - If the AUTO RIPPLE button is selected, downstream events will move as you drag the event. For more information, see Post-edit ripple

3. Release the mouse button.

   > **TIP** If you right-click and drag an event, a shortcut menu is displayed when you release the mouse button. You can choose MOVE HERE from the menu to move the event, or choose COPY HERE to preserve the position of the original and create a copy of the event where you release the mouse.

Moving multiple events along the timeline

1. If you want to move an event and all subsequent events on a track, right-click the event and choose SELECT EVENTS TO END or turn on AUTO RIPPLE . For more information, see Post-edit ripple
2. Drag the events to the position where you want them to be played.

> **TIP** You can also use keyboard shortcuts to move events. Press 1 or 3 on the numeric keypad to move one frame left or right, or press 4 or 6 on the numeric keypad to move one pixel left or right. For more information, see Keyboard shortcuts

Cutting, copying, and pasting events

In the same way you might use a word processor, you can use VEGAS Pro to cut, copy, and paste events along the timeline.

1. Click an event to select it.
2. Click the COPY or CUT button.
3. Click to position the cursor where you want to insert the event.

> **NOTE** Clicking in the timeline will position the cursor along the timeline and select a track. Video events must be pasted to a video track, and audio events must be pasted to an audio track.

4. Click the PASTE button .

For more information, see Cutting, copying, and pasting events

Adjustment events

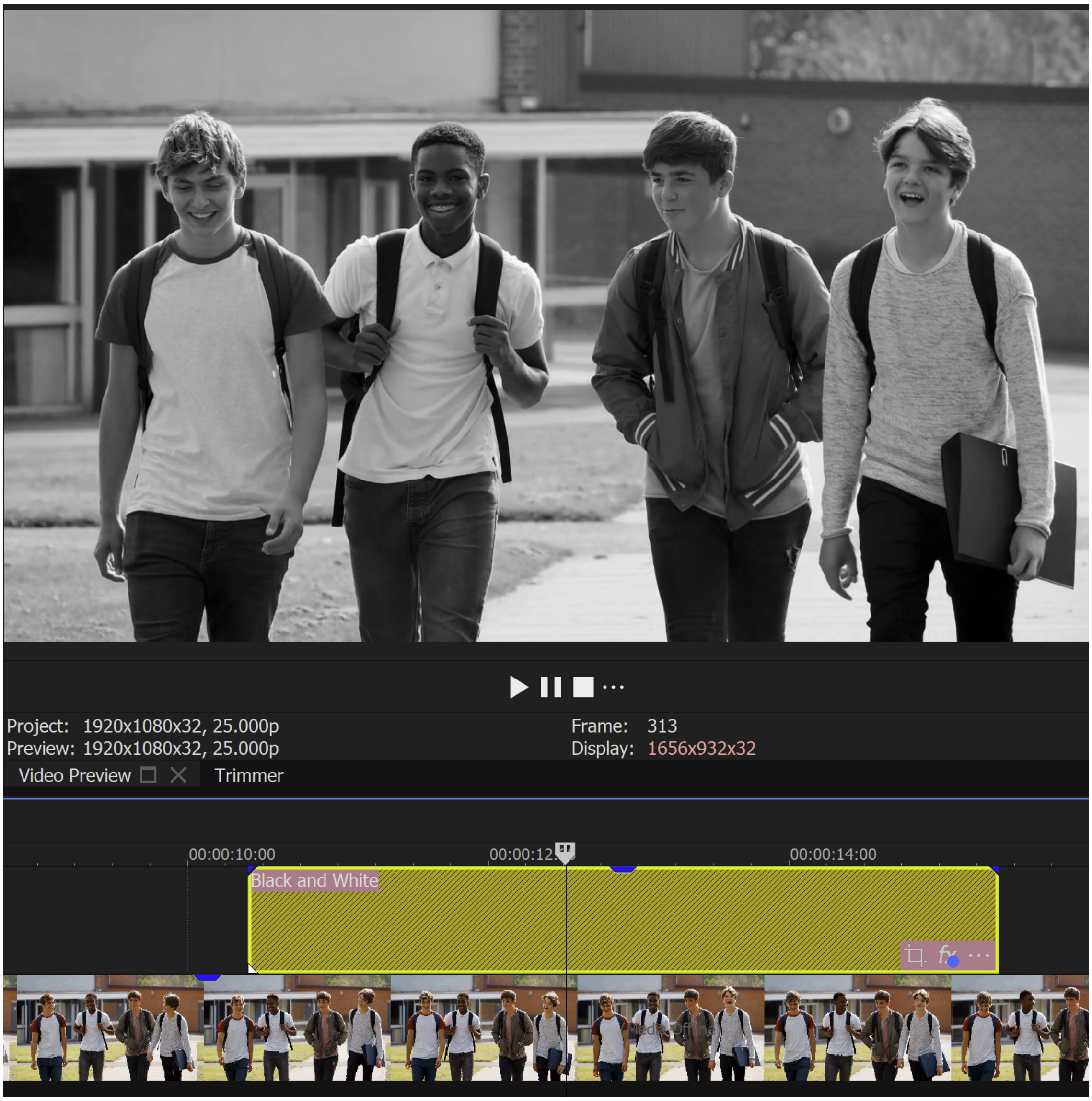
new since VEGAS Pro 23

Adjustment events provide a powerful tool for adding effects to your project in very flexible and creative ways. You can add an adjustment event to your project and apply effects to that event. Then, any video event in your timeline directly below the adjustment event will “inherit” the effect from the adjustment event. You can use this to easily bring effects in and out, create sophisticated custom transitions, and much more.

Adjustment events behave similarly to regular video events, but with some additional capabilities. Here are some techniques you can use with adjustment events:

- Add fades in and out.
- Change the opacity.
- Create trim, split, and other edits.
- Cut, copy, and paste adjustment events.
- Use the Mute and Lock switches to control their behavior.

> **NOTE** Certain functions, such as reversing or adding a Velocity envelope, do not apply to adjustment events.



Project: 1920x1080x32, 25.000p
Preview: 1920x1080x32, 25.000p
Frame: 313
Display: 1656x932x32

Video Preview
Trimmer
00:00:10:00
00:00:12
00:00:14:00
Black and White

Adding an Adjustment Event

- You already have one or more video events in your timeline.

1. Choose INSERT | VIDEO TRACK to add a new track to the top of your project.
2. Reorder the tracks so that only the desired tracks are below the new track.
3. Click the timeline within the new track to select it.
4. Place your cursor at the desired starting point for the adjustment event.

5. Choose INSERT | ADJUSTMENT EVENT.

   This adds a new event to the timeline, which is an empty event with special shading that indicates it is an adjustment event.

Just like any video event, you can add up to 32 effects in the chain of effects for the event.

Applying Effects to Adjustment Events

Once you've added an adjustment event, you can apply effects to it.

- Make sure your timeline cursor is within the adjustment event, and notice in the VIDEO PREVIEW window that the adjustment event has no effect on your project.

1. Click the VIDEO FX tab.
2. Choose an effect from the list on the left.

   > **EXAMPLE** For instance, assuming the video beneath the adjustment event is a color clip, choose Black and White from the list of effects.

3. Drag the desired preset onto the adjustment event.
4. Preview the effect in the Video Preview window.

   The effect has been applied to the video beneath the adjustment event.

Naming an Adjustment Event

You can also name your adjustment events to easily identify and reuse them in your project.

1. Right-click the adjustment event.
2. Choose PROPERTIES from the context menu.
3. In the PROPERTIES window, enter a name in the ACTIVE TAKE name field.
4. Click OK to save the name.

5. To see the name, click the event’s MORE ··· button and choose ACTIVE TAKE INFORMATION from the More menu.

Using Multiple Adjustment Events

You can add multiple adjustment events to your project, either on the same track or on different tracks. They can overlap with automatic crossfades or transitions. Experiment with stacking adjustment events to create different effects at different times, either alone or in combination with other adjustment events.

Adjustment Events and Adjustment Tracks

For even more flexibility, you can combine adjustment events with adjustment tracks. This allows you to apply effects to specific tracks or groups of tracks in your project.

Color Grading and Correcting with Adjustment Events

You can use adjustment events in your color grading and correcting workflow. Apply color adjustments using the Color Grading panel, and these adjustments will be applied to the video (or videos) in the tracks below the adjustment events. You can easily copy and paste adjustment events to apply the same grading to other video events in your project.

1. Remove all effects from the adjustment event.
2. With the adjustment event selected, click the Color Grading button to open the Color Grading panel.
3. Make adjustments in the Color Grading panel and notice that these changes are applied to the video (or videos) in the tracks below the adjustment event.
4. Once you've finished your grading, you can easily apply the same grading to other video events. Copy the adjustment event and paste it above any other video event(s) to which you want to apply the same grading.

Creating Custom Transitions

Adjustment events can be used to create custom transitions between video clips. By adding effects and animating their parameters, you can achieve unique transition effects. Experiment with different effects and techniques to create the desired transition effects for your project.

1. Set up a project with an adjustment event on a track above two video events that are snapped to each other without overlapping.
2. Position the adjustment event to span the cut between the two clips below.

3. From the Video Event FX window, drag the Default preset of the Linear Blur plug-in onto the adjustment event.
4. Click the Animate button for the Amount parameter in the Video Event FX window.
5. In the timeline, click the adjustment event at the point where the two video events meet.
6. Click the Sync Cursor to Media Timeline button in the Video Event FX window.
7. Set the Amount parameter slider to 1.0.
8. Click the end of the adjustment event in the timeline.
9. Finally, set the Amount parameter slider back to 0.0. (Remember to turn off the Sync Cursor to Media Timeline button afterward.)
10. Click to place your cursor before the adjustment event and play your project.

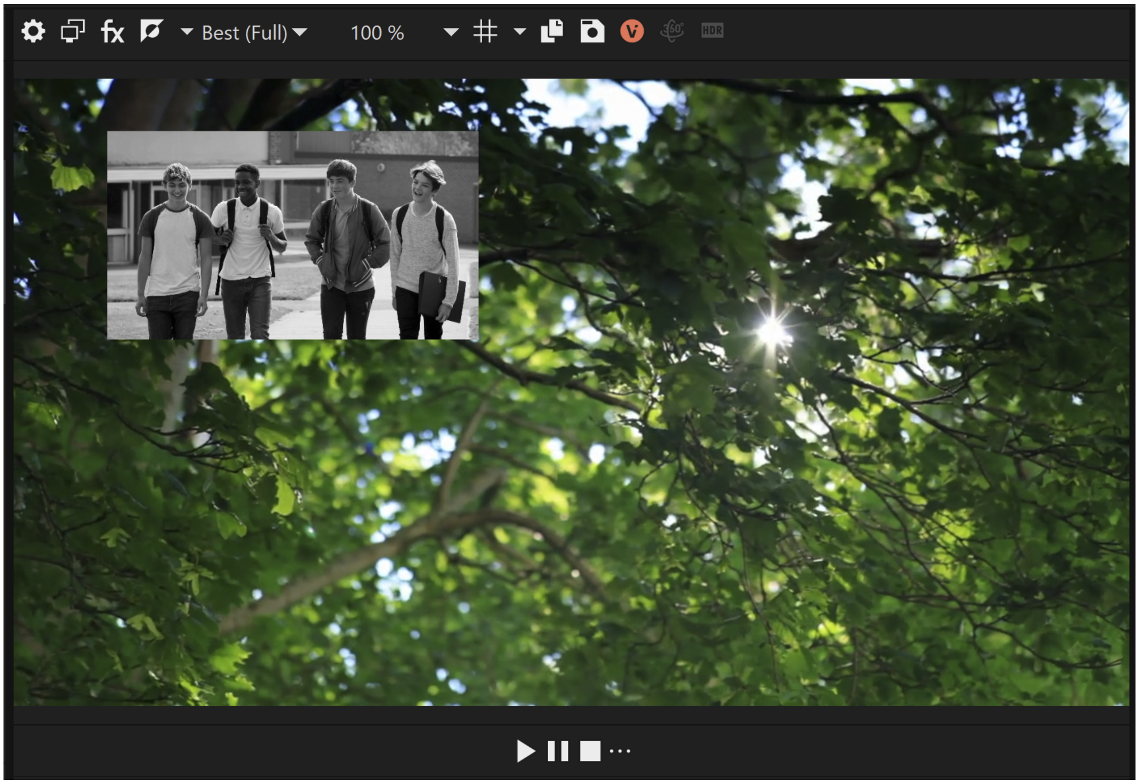
    You've just created a simple blur transition between the two clips. And, since the blur exists in the adjustment event, you can simply copy and paste that event and place it over any other two events to add exactly the same transition to those.

    To take your custom transitions to the next level, add the Offset and Wrap OFX plug-in to create motion during the transition.

Limiting Adjustment Events to Specific Tracks

You can restrict the effects of an adjustment event to specific tracks in your project.

1. Add another video clip beneath the one currently affected by the adjustment event.
2. Click the Video FX tab and select Picture In Picture from the list of effects.
3. Drag the Upper Left, Scaled, No Angle, Opaque preset onto the upper video event (not the adjustment event).
4. This creates a picture-in-picture composite of the two videos, with both appearing in black and white.
5. Click the More button for the track holding the top video and choose Make Compositing Child from the menu.



The adjustment event's effect is now limited to tracks that are compositing children of the track holding the adjustment event. Only the inset video remains black and white, while the other video is unaffected.

Using Masking Techniques

You can create various effects by utilizing masking with adjustment events.

1. Insert another video track and position it between the two video tracks.
2. Add a new adjustment event to this track and apply an effect. For example, use the Extreme Blur preset to add a Gaussian Blur filter to the adjustment event.
3. To blur only a portion of your video, use a masking technique. Select the Cookie Cutter effect from the Video FX window and drag the TicTakToe preset onto the new adjustment event.
4. Observe in the Video Preview window that the preset "cuts holes" in the video, masking out the blur effect and revealing the unblurred portion.

Automatic crossfades

From the Options menu, choose AUTOMATIC CROSSFADES if you want to automatically create crossfades when you overlap two events.

Creating a crossfade

You can easily create crossfades between audio or video events by simply dragging an event.

1. From the Options menu, choose AUTOMATIC CROSSFADES to turn on automatic crossfades.
2. Drag an event so that it overlaps another event on the same track.

   A crossfade is automatically added to transition smoothly between the two events.

Changing the fade type

You can change a crossfade to use one of many combinations of fast, slow, linear, smooth, and sharp fade curves.

1. Right-click the overlapping area to display a shortcut menu.
2. Choose FADE TYPE from the shortcut menu and choose a fade curve from the submenu.

Converting a video crossfade to a transition

1. Right-click a crossfade between two video events and choose TRANSITION from the shortcut menu.
2. Choose a transition type from the submenu to convert a crossfade to a transition, or choose INSERT OTHER to choose another transition type from the Plug-In Chooser.

   For more information about using transitions, see Transitions

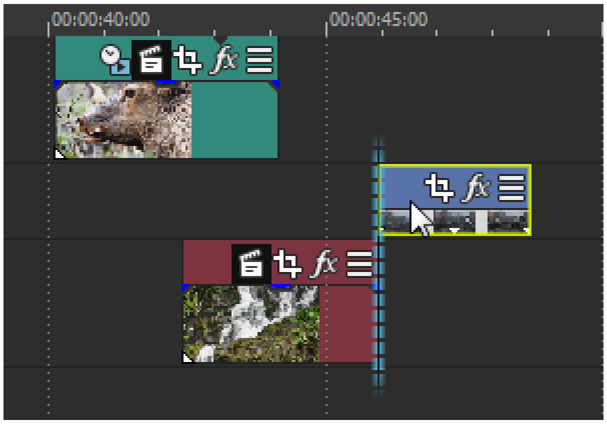
> **TIP** Drag a transition from the Transitions window to a video crossfade to quickly convert a crossfade to another transition type.

Enable snapping

From the Options menu, choose ENABLE SNAPPING to turn snapping on or off in the main timeline and in the Trimmer window.

Snapping helps you align items along the timeline when you move events, trim events, or work with markers and regions.

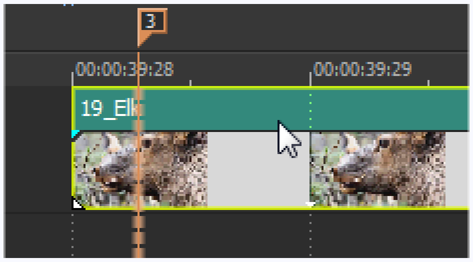
As you drag items along the timeline or in the Trimmer window, an indicator is displayed to show snap points. When you snap to an event, the snap indicator is displayed in the appropriate track. If you snap to the cursor, a marker/region, time selection, or the grid, the snap indicator is displayed across the height of the timeline:



TIP

- When you drag a group of selected events, the first and last event will snap to other snap points on the timeline. If the leftmost event has an event snap offset established, the offset will be used as the left snap point.
- When snapping is enabled, you can hold the Shift key to temporarily override snapping.
- When snapping is not enabled, you can hold the Shift key to temporarily enable snapping.
- You can edit snap indicator colors on the Display tab of the Preferences dialog.

  For more information, see [Display Tab](#)
- If you drag to a snap point that does not occur on a frame boundary when QUANTIZE TO FRAMES is enabled, the snap indicator is displayed as a dashed line to indicate that the snap point will be quantized to the nearest frame boundary:

  For more information, see [Quantize to frames](#)

Turning snapping on or off

From the Options menu, choose ENABLE SNAPPING to turn snapping on or off. When snapping is enabled, events will snap to the following points:

- Other events' edges
- The cursor
- Time selection edges
- The first and last event edges (when dragging multiple events)

You can also choose to snap events to grid lines or to markers.

Snapping to the grid

When snapping is enabled, you can also choose to have elements in the timeline snap to the vertical grid lines in the timeline.

From the Options menu, choose SNAP TO GRID (or press Ctrl+F8) to toggle snapping to grid lines.

> **TIP** To change the spacing of the grid, choose GRID SPACING from the Options menu and choose a setting from the submenu.

Snapping to markers

When snapping is enabled, you can also choose to have elements in the timeline snap to markers in the timeline.

From the Options menu, choose SNAP TO MARKERS (or press Shift+F8) to toggle snapping for all marker types:

- Markers
- Regions
- CD track regions
- CD index markers
- Command markers

If the EVENT MEDIA MARKERS command is selected on the View menu, you can also use media markers as snap points when you click in an event or edge-trim an event. For more information, see Using media markers and regions

> **NOTE** If a media file's frame rate does not match your project frame rate, you will not be able to snap to media markers (or other snap points that do not occur on a frame boundary) when QUANTIZE TO FRAMES is selected on the Options menu. For more information, see [Quantize to frames](#)

Snapping to events on other tracks

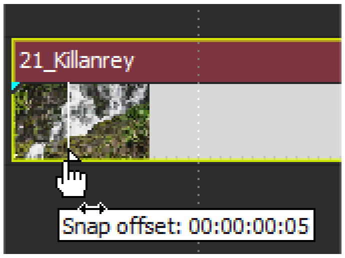
When snapping is enabled, you can also choose to have elements in the timeline snap to the ends of events on other tracks.

From the Options menu, choose SNAP TO ALL EVENTS (or press Ctrl+Shift+F8) to toggle snapping to event edges across tracks.

Setting an event snap offset

Each event has a snap offset flag that you can move along the event's length to fine-tune where snapping will occur.

To adjust the flag, drag the white triangle in the lower-left corner of the event. A ToolTip displays the amount of offset.



Snap offset: 00:00:00:05

Quantize to frames

From the Options menu, choose QUANTIZE TO FRAMES to force edits to occur on project frame boundaries. This setting is independent of grid and marker snapping.

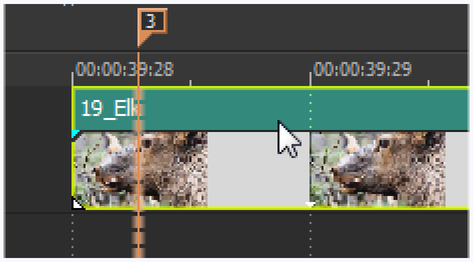
When QUANTIZE TO FRAMES is turned on, the following actions will always occur on frame boundaries:

- Moving video events

  If QUANTIZE TO FRAMES is on while dragging an audio event and the selection group contains video, the movement is quantized so the first video event is quantized (instead of the audio event).

  When performing audio-only edits, quantization will occur only if QUANTIZE TO FRAMES is turned on and the DO NOT QUANTIZE TO FRAMES FOR AUDIO-ONLY EDITS checkbox on the Preferences | Editing tab is not selected.
- Positioning the cursor
- Making selections
- Placing markers and regions

NOTE
If you drag to a snap point that does not occur on a frame boundary when QUANTIZE TO FRAMES is enabled, the snap indicator is displayed as a dashed line to indicate that the snap point will be quantized to the nearest frame boundary. For more information, see Enable snapping



IMPORTANT Edits that do not occur on frame boundaries can produce an undesirable visual result. For example, if you split two events and move them together to create a cut, splits that are not at frame boundaries can produce a short dissolve in your rendered video.

Show Unquantized Event Edges

You can turn on an obvious display that shows all of the event edges that do not begin or end exactly on a video frame. By default, VEGAS Pro quantizes event edges as you move or trim them. However, if the media you add to your timeline was shot at a different frame rate than your project framerate, the edges of the event that holds a piece of media might well land between project frames. You'll notice this when the right edge of an event you added does not end directly on a project frame. There are other ways that event edges might end up off of a project video frame as well.

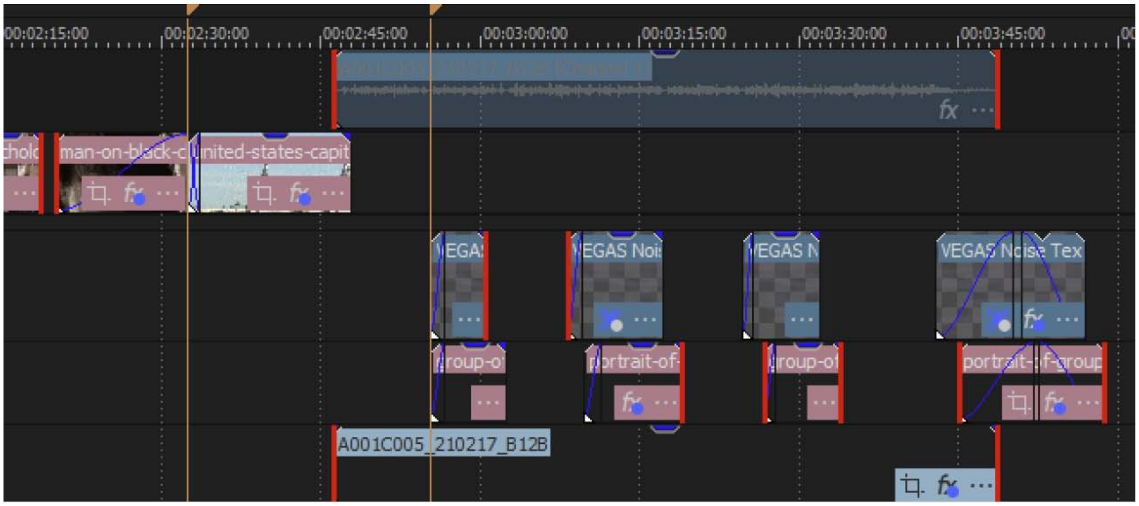
It can be easy to miss event edges that don't land on a project frame, especially when you're working at zoomed-out view levels. The settings make it easy to identify unquantized event edges so that you can fix them.

> **NOTE** Leaving unquantized edges in your project timeline can cause unpredictable results in the final rendered file, so it's important to fix these before you deliver your project.

The ENABLE QUANTIZE TO FRAMES option turns frame quantization on and off. The setting defaults to **On** in order to help you avoid quantization problems. It's usually wise to keep this setting on. But even still, as described above, you might end up with unquantized frames in your project.

» Choose OPTIONS | QUANTIZE TO FRAMES | SHOW UNQUANTIZED EVENT EDGES.

Notice that a bright red line appears on the event edge that was not quantized. This indicator serves as an invaluable check against problematic edits in your project.


00:02:15:00
00:02:30:00
00:02:45:00
00:03:00:00
00:03:15:00
00:03:30:00
00:03:45:00
fx
man-on-black-c
nited-states-capit
VEGAS Noi
VEGAS N
VEGAS Noise Tex
portrait-of-
portrait-of-group
A001C005_210217_B12B

The indicator appears on any unquantized event edges whether left or right and regardless of whether the event holds video or audio. You don't need to worry so much about unquantized audio event edges unless those edges correspond to a partner video event. Frame quantization has no benefit for audio events, and in fact, VEGAS Pro ignores this quantization for any audio-only edits, but will still identify audio event edges that are not quantized.

You might consider working with this indicator on at all times. But if the red highlight annoys you while you edit, then at the very least you should turn this indicator on at the very end of your edit before you deliver your project just to make sure you won't have unexpected rendering results.

Cutting, copying, and pasting events

Just like a word processor for audio and video, VEGAS Pro will allow you to cut events, copy events, and paste them into new places.

> **TIP** When the CUT, COPY, AND DELETE GROUPED EVENTS checkbox on the Editing tab of the Preferences dialog is selected, cutting, copying, or deleting an event will affect all events in the same group. If you need to edit a single event, you can choose IGNORE EVENT GROUPING from the Options menu to temporarily ignore grouping.
>
> For more information, see Editing Tab

Cutting events

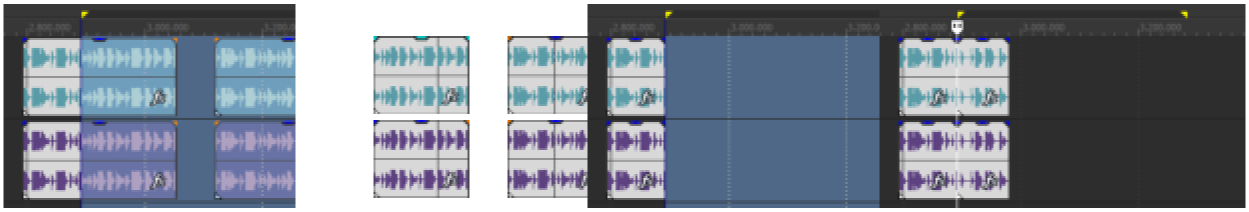
Select the events you want to remove and click the CUT button ✂ (or press Ctrl+X). The selected events are removed from the track and placed on the clipboard.

> **TIP** From the Edit menu, choose GROUP, and choose CUT ALL from the submenu. The selected events and any events that are grouped with the selected events are cut to the clipboard.

If you want to shuffle existing events to fill the space left by cut events when using a time selection, use post-edit ripple mode. For more information, see [Post-edit ripple]

Cutting a time selection

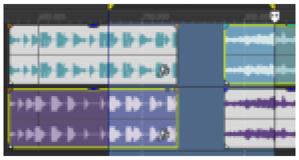
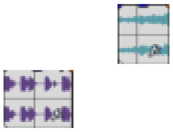
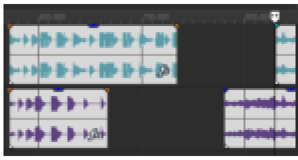
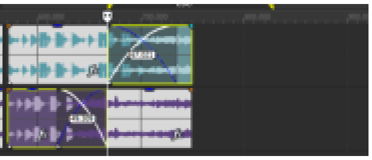
If you cut a time selection, events across all tracks are removed from the timeline and placed on the clipboard. Events that extend beyond the time selection are split at each end of the time selection:



Time selection	Clipboard	Events after cut	Events after cut (ripple mode)

Cutting selected events within a time selection

If you cut selected events within a time selection, the selected events are removed from the timeline and placed on the clipboard. Selected events that extend beyond the time selection are split at each end of the time selection:

			
Time/event selection	Clipboard	Events after cut	Events after cut (ripple mode)

Copying events

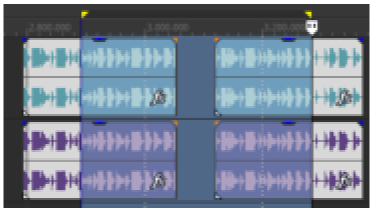
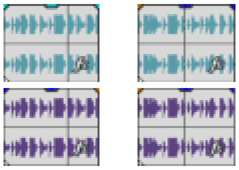
Select the events you want and click the COPY button or choose EDIT | COPY(or press Ctrl+C). This selected events are copied to the clipboard. You may now paste the events anywhere in the project.

TIP

- Hold Ctrl while dragging to create copies of selected events.
- From the Edit menu, choose GROUP, and choose COPY ALL from the submenu. The selected events and any events that are grouped with the selected events are copied to the clipboard.

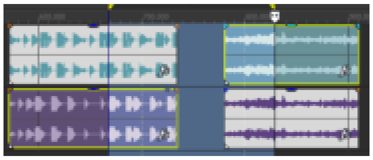
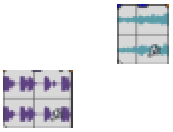
Copying a time selection

If you copy a time selection, the portions of events that are within the selection (across all tracks) are placed on the clipboard:

	
Time selection	Clipboard

Copying selected events within a time selection

If you copy selected events within a time selection, the portions of selected events that are within the time selection are placed on the clipboard:

	
Time/event selection	Clipboard

Pasting events

Position the cursor and click the PASTE button or choose EDIT | PASTE (or press Ctrl+V). Events from the clipboard are inserted at the cursor position.

Pasted events will sit on top of other events in the track if they overlap. To make space for pasted events, you can use PASTE INSERT or use post-edit ripple mode. For more information, see Post-edit ripple

Pasting the contents of the clipboard multiple times

From the Edit menu, choose PASTE REPEAT (or press Ctrl+B) to insert events from the clipboard multiple times at the current cursor position. You may also specify the time increments for which you want the events to be spaced.

1. Copy events to the clipboard.
2. Position your cursor where you want to begin pasting the events.
3. From the Edit menu, choose PASTE REPEAT. The Paste Repeat dialog box appears.

4. In the NUMBER OF TIMES TO PASTE box, enter the number of times you want to paste the event.
5. Select your options and specify the settings if applicable:
    - END TO END – Pastes the events one after another with no space between.
    - EVEN SPACING – Pastes the events with the time increments specified in the PASTE EVERY controls between the starting points of the pasted events.

      If the PASTE EVERY setting is shorter than the clipboard contents, the pasted events will overlap.

Pasting insert events

To insert the contents of the clipboard at the current cursor position and force existing events to move in time to accommodate the pasted events, choose PASTE INSERT from the Edit menu (or press Ctrl+Shift+V).

> **NOTE** If the cursor is in the middle of an event, the event will be split at the cursor position when the new events are pasted.

Deleting events

Click the DELETE button ✕ on the editing toolbar (or choose EDIT | DELETE) to remove selected events or tracks without copying them to the clipboard.

> **NOTE** If you try to delete a track that contains events, a warning message will appear that you are about to delete these too, giving you the option to cancel this action.

TIP

- When the CUT, COPY, AND DELETE GROUPED EVENTS checkbox on the Editing tab of the Preferences dialog is selected, cutting, copying, or deleting an event will affect all events in the same group. If you need to delete a single event, you can choose IGNORE EVENT GROUPING from the Options menu to temporarily ignore grouping.

  For more information, see [Editing Tab]()

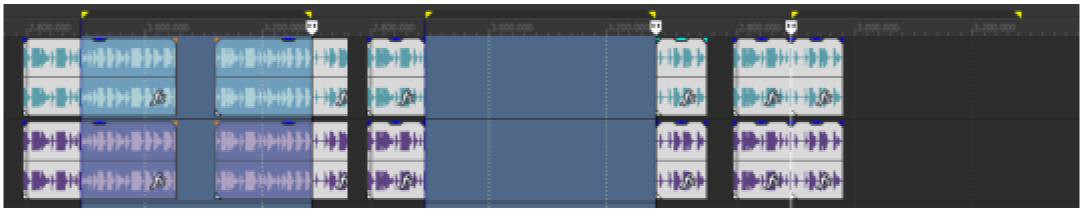
- If you want to remove time from all tracks in your project, create a time selection that encompasses the time you want to delete. Select the AUTO RIPPLE button (or press Ctrl+L). Next, click the down arrow ▾ next to the AUTO RIPPLE button and choose ALL TRACKS, MARKERS, AND REGIONS. When you delete the time selection, the selected portion of the timeline is removed, and events to the right of the deleted section shift left to fill the space.

Deleting all events in a time selection

If you want to automatically move events to fill the space left by deleted events when using a time selection, use post-edit ripple mode.

For more information, see [Post-edit ripple]()

1. Create a time selection.
2. Press Ctrl+Shift+A to deselect all selected events.
3. Click the DELETE button ✕ on the editing toolbar (or choose EDIT | DELETE). Events across all tracks are removed from the timeline. Events that extend beyond the time selection are split at each end of the time selection:

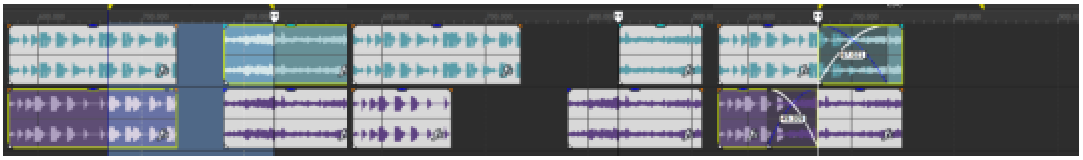


Time selection	Events after delete	Events after delete (ripple mode)

Deleting selected events

1. Select the events you want to delete.
2. Click the DELETE button × on the editing toolbar (or choose EDIT | DELETE).

   If you delete selected events within a time selection, the selected events are removed from the timeline. Selected events that extend beyond the time selection are split at each end of the time selection:



Time/event selection	Events after delete	Events after delete (ripple mode)

> **TIP** From the Edit menu, choose GROUP, and choose DELETE ALL from the submenu. The selected events and any events that are grouped with the selected events are deleted.

Trimming events

Click the TRIM button on the editing toolbar to remove all data from the events except the selected data.

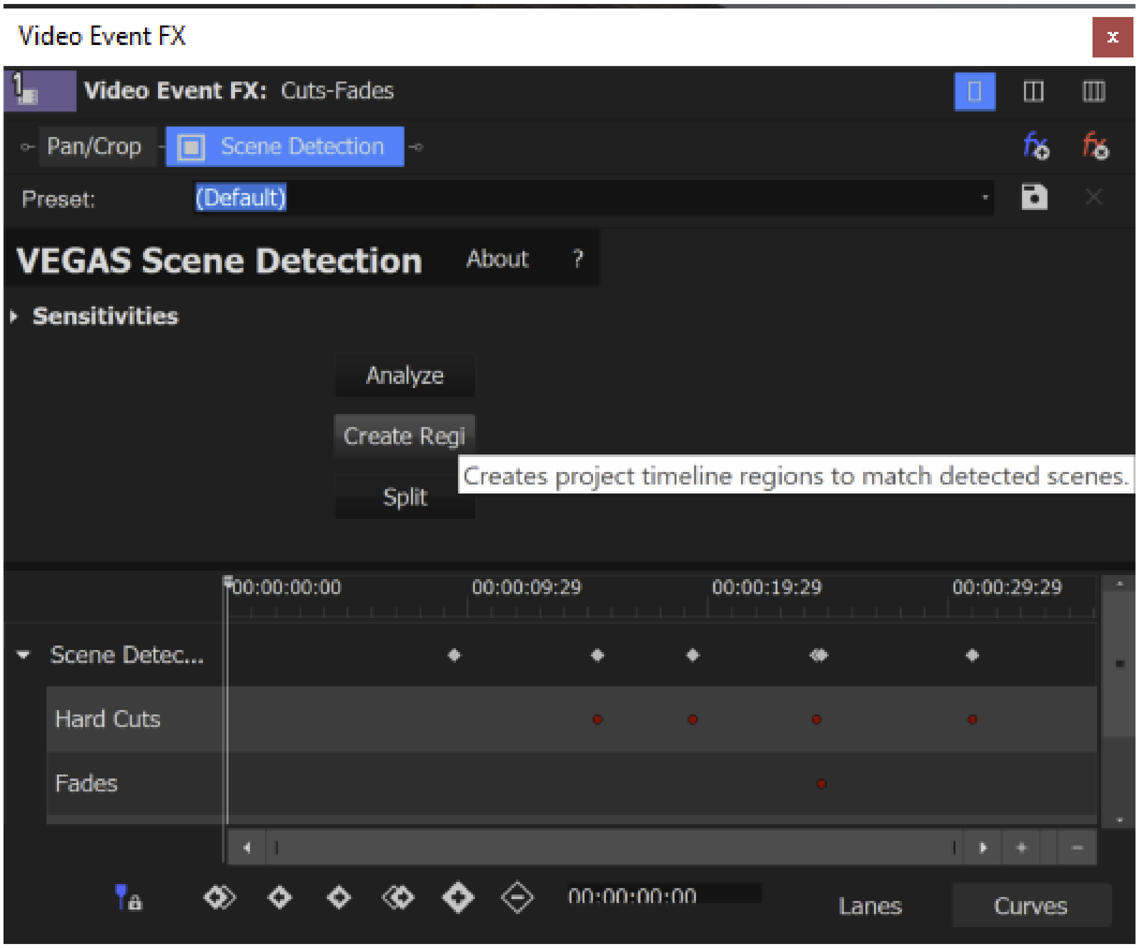
This command has no effect if there is no selected data.

1. Drag the cursor to make a timeline selection (or hold down the Shift key and use the arrow keys to make the selection).
2. Click the TRIM button on the editing toolbar. All data outside of the selection is deleted. Events that are not selected will not be trimmed.

> **TIP**
>
> - Click the TRIM START button (or press Alt+[) to trim the start of the event to the cursor position.
> - Click the TRIM END button (or press Alt+]) to trim the end of the event to the cursor position.

Scene/Edit Detection

When you need to re-edit a video that has already been rendered into a single file, you can use the VEGAS Pro Scene Detection tool to simplify the process. Through the power of AI, Scene Detection automatically detects cuts, fades, and crossfades in your video, then cuts the video into separate timeline clip events or subclips in your Project Media window.


Video Event FX
Video Event FX: Cuts-Fades
Pan/Crop
Scene Detection
Preset:
(Default)
VEGAS Scene Detection
About
?
Sensitivities
Analyze
Create Regi
Split
00:00:00:00
00:00:09:29
00:00:19:29
00:00:29:29
Scene Detec...
Hard Cuts
Fades
00:00:00:00
Lanes
Curves

Creates project timeline regions to match detected scenes.

Use the Scene Detection tool

1. Add a video to your timeline.
2. Option 1:

   » Click the event's MORE ··· button and choose DETECT SCENES AND SPLIT from the menu.

   The tool analyzes the media in the event and detects scene changes. It then automatically splits the event into separate events, each of which holds a distinct detected scene.

   - or -

   Option 2:

1. Click the VIDEO FX tab to open that window.
2. Select SCENE DETECTION from the list of effects.
3. Drag the DEFAULT preset onto the event in your timeline.
4. In the VIDEO EVENT FX window, click the ANALYZE button.

   After the analysis is complete, a keyframe timeline appears and contains keyframes at the location of each cut, fade, or dissolve. You may manually edit these keyframes to fine tune your results.

Use the tool at the project media level

Click the PROJECT MEDIA tab if necessary to view that window.

Here you can either add the detected scenes to your timeline, or create subclips for each individual detected scene.

Detect scenes and add them as separate events to your timeline:

Right-click the clip in the PROJECT MEDIA list and choose DETECT SCENES AND ADD TO TIMELINE from the context menu.

The tool adds the file to your timeline at the current cursor location, detects the separate scenes, and splits the event up into multiple events according to the detected scenes.

Create individual subclips in the Project Media bin without adding anything to your timeline:

Right-click the clip in the PROJECT MEDIA list and choose DETECT SCENES AND CREATE SUBCLIPS from the context menu.

After analysis completes, the tool adds a new subclip to your bin for each individual scene it detects.

Detect scenes from your Trimmer window:

Right-click your clip in the PROJECT MEDIA window and choose OPEN IN TRIMMER from the context menu (or use one of the other methods for adding a clip to your Trimmer window).

Click the Trimmer window’s MORE ⋯ button and choose DETECT SCENES AND ADD TO TIMELINE from Cursor from the context menu.

Again, this results in individual events on the timeline for each detected scene.

Add the tool as an effect to a timeline clip event:

This can be extremely useful if you want to break a nested timeline or project event on your main timeline into individual events. It can also help when the more automatic methods discussed above don't yield the results you need and you want to have a bit more control over the process.

If you don't get satisfactory results on the first analysis, Click the SENSITIVITIES drop-down arrow to reveal the sensitivity controls. Adjust these controls and re-analyze the clip. Experiment with different sensitivities until you get the result you want.

After you have successfully detected the edits in your video, click the Split button to apply the detected edits to the clip on your timeline.

Create regions

new since VEGAS Pro 23

You can automatically create regions that correspond to the detected scenes. There may be a number of reasons that you'll want to create regions, but one example is that you can then use those regions with the Batch Render script to render out new files for each detected scene.

1. Run the Scene Detection Analyze function on a selected event.
2. When analysis is complete, click the Create Regions button. Regions are instantly added in the timeline.

If you want separate events for each scene:

» Click the Split button.

- or-

If you want to render out individual files:

1. Choose TOOLS | SCRIPTING | BATCH RENDER.
2. In the BATCH RENDER script dialog box, select the RENDER REGIONS radio button, specify your other options, and click OK.

Post-edit ripple

You can ripple the contents of the timeline following an edit after performing the following tasks:

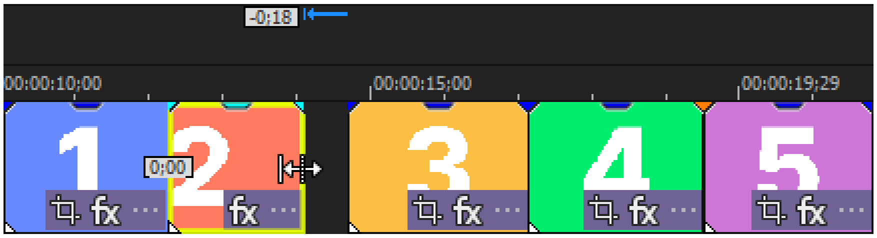
- Adjusting an event's length by trimming, slip-trimming, sliding, or time stretching.
- Moving events.
- Cutting events.
- Pasting events.
- Deleting events.

Ripple Type	Description
Affected Tracks	Ripples events, keyframes, and envelopes on tracks where you performed the edit.
Affected Tracks, Bus Tracks, Markers, and Regions	Ripples events, keyframes, and envelopes on tracks where you performed the edit. This command also ripples the following: - Markers - Regions - CD track and index markers - Command markers - Keyframes and envelopes on audio or video bus tracks
All Tracks, Markers, and Regions	Ripples events, keyframes, and envelopes on all tracks in your project. This command also ripples the following: - Markers - Regions - CD track and index markers - Command markers - Keyframes and envelopes on audio or video bus tracks

TABLE *Ripple types*

Applying a post-edit ripple manually

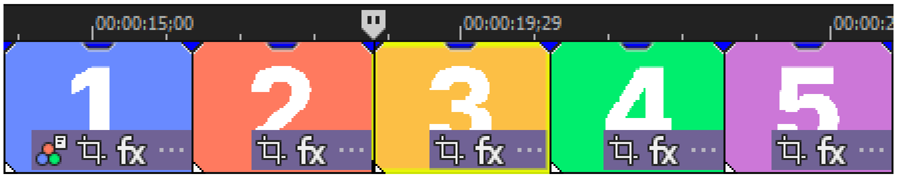
1. Perform one of edits listed above. In the following example, the second event is being trimmed, and the arrow above the timeline indicates where the post-edit ripple will occur and the direction the affected events will move.



The selected event contains a bright yellow border to indicate that it has been selected and the timeline cursor flashes between white and black.

2. In the main menu, click EDIT | POST EDIT RIPPLE, and choose a ripple type (see table Ripple types).

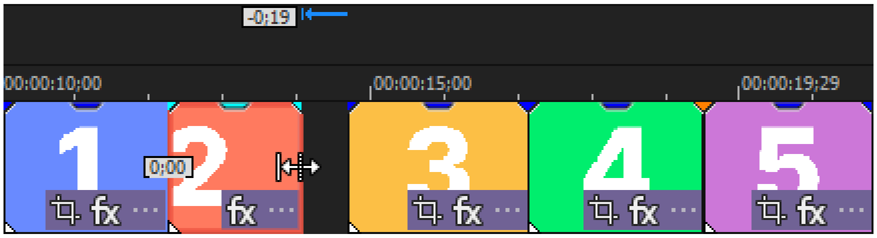
   The contents of the timeline are rippled after the edit according to the option you choose. In the following example, the post-edit ripple has closed the space between the second and third events.



> **TIP** Press F after an edit to ripple the affected tracks, press Ctrl+F to also ripple markers, keyframes, and envelopes. To ripple everything after an edit, press Ctrl+Shift+F.

Applying a post-edit ripples automatically

1. In the editing toolbar, select the AUTO RIPPLE button (or press Ctrl+L).
2. Click the down arrow next to the AUTO RIPPLE button and choose a ripple type (see table Ripple types).
3. Perform one of edits listed above. In the following example, the second event is being trimmed, and the arrow above the timeline indicates where the post-edit ripple will occur and the direction the affected events move.



> **NOTE** When you engage AUTO RIPPLE mode, the event boarder that highlights a selected event turns from yellow to red. The timeline cursor also changes to red. These indicators will help you avoid accidentally making ripple edits when you've forgotten that you are in Auto Ripple mode.

The contents of the timeline are rippled after the edit according to the option you choose. The post-edit ripple has closed the space between the second and third events.

> **TIP**
> Adjust the appearance if you don't want to use these indicators.
>
> 1. Choose OPTIONS | PREFERENCES | EDITING tab.
> 2. Deselect the CHANGE CURSOR AND SELECTED EVENT COLOR WHEN IN AUTO RIPPLE MODE check box.

Splitting events

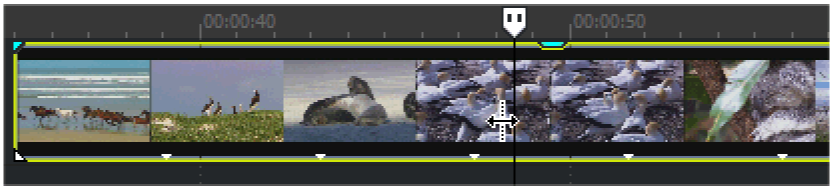
Click the SPLIT button on the editing toolbar (or choose EDIT | SPLIT) to split one or more selected events at the current cursor position.

Splitting an event allows you to adjust a small part of an event or break a single event into multiple sections that you can edit independently. For example, you may want to apply an effect to a section of an event and then return the event to its original setting.

1. Position the cursor where you want to split the events, or select a range of time.
2. Select the events you want to split.

3. Click the SPLIT button on the editing toolbar (or choose EDIT | SPLIT):
   - If no events are selected, the events located at the current cursor position will be split throughout all of the tracks.
   - If you create a time selection, events are split at each end of the time selection throughout all of the tracks.
   - If you select events within a time selection, the selected events are split at each end of the time selection.
   - Hold Ctrl+Alt+Shift while clicking an event to split it. Hold Ctrl+Alt+Shift and drag an event to split it at the point you click and trim the event in the direction you drag.

   > **TIP** Holding the Shift key temporarily overrides snapping if it is enabled. Release the Shift key while dragging to snap the event to available snap points.



Smart Splitting Events

Sometimes you want to cut out parts of a longer video recording, say an interview, shot from a fixed camera position. Because the speaker's head has moved in the cut out part but the rest of the picture stays unchanged, you would get a so-called "jump cut" where the head jumps into the new position.

To conceal those cuts you can use the Smart Split command:

1. Select the event.
2. Make a time selection over the part that you want to be removed.
3. Choose SMART SPLIT from the EDIT menu, press Alt +S or click the Smart Split button from the [The Transport and Editing Toolbar]

4. The selected time is removed from the event, the second event is moved over the first one for the short time span of five frames and a WARP FLOW transition is applied. The two events are grouped.

   The Warp Flow transition uses sophisticated optical flow technology to add new intermediary frames that smoothly morph the last frame of the first event into the first frame of the second event.

> **TIP** This works best with no camera movement and no movement in the background of the video.

Healing Events

If you accidentally split an event in two, it is possible to heal this split.

1. Select the two items: Click the first event, then hold the `Ctrl` key and click the second event.
2. Right click one of the events end select HEAL
3. The events are combined into one again.

You can even heal a split when the events were moved and/or trimmed in the meantime according to the following rules:

- The events have to be on the same track.
- The resulting event starts with the start frame of the first event and ends with the end frame of the second one, no matter where the first one ends and the second one starts (i.e. how big the gap between the two is).
- If the HEAL command option is grayed out (that means, healing is not possible): Make sure the two events refer to the same media file and the order of the events matches the position in the media the events refer to.

Closing gaps

You can quickly close the gaps between selected events.

1. Select two or more events on a track.
2. Choose Menu EDIT or right-click on an empty space in the track or on one of the selected events | CLOSE GAPS from the menu or context menu.
3. The second and all following selected events are moved towards the first one so they will border at each order closing the gaps between them.

> **NOTE** If no event is selected when performing this command all gaps on the track will be closed.

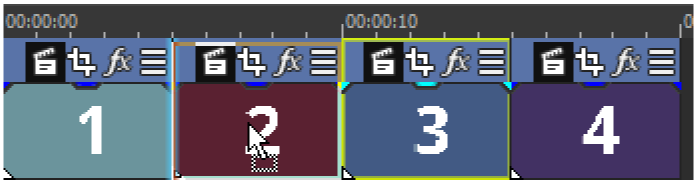
Shuffling events

Much like ripple editing, shuffling events allows you to change the order of a sequence of events with a single operation.

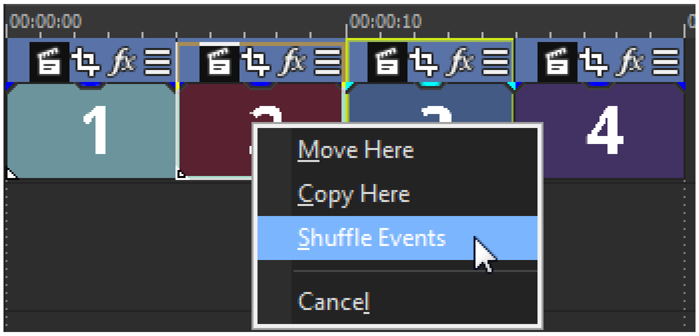
> **NOTE** Ripple edit mode does not need to be active to shuffle events. For more information, see Post-edit ripple

1. Right-click and drag an event to a new location on the timeline.

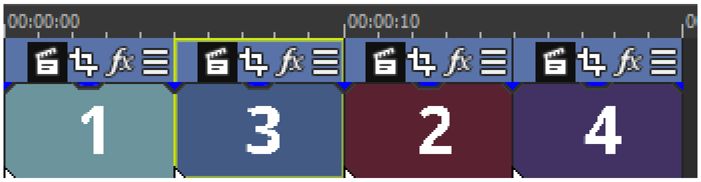
   In this example, we'll drag event 3 between events 1 and 2.



2. From the shortcut menu, choose SHUFFLE EVENTS.



After the shuffle, event 3 appears between events 1 and 2:



TIP

You can also use the Shuffle tool to shuffle events.

1. Select the Shuffle tool.
    - Click the down arrow next to the Normal tool and select SHUFFLE TOOL.
    - Choose EDIT | EDITING TOOL | SHUFFLE TOOL.
2. Drag an event to a new location on the timeline.

For more information, see Editing Tool

Using the Trimmer

Choose VIEW | WINDOW | TRIMMER to toggle the display of the Trimmer window. The Trimmer window allows you to select portions of a piece of media that can be placed into events on tracks.

You can also create subclips in the Trimmer window. Subclips expand on the notion of media file markers and regions: just as you might save markers or regions in a media file to indicate an area of interest, you could create a subclip to mark a portion of a media file. A subclip is available in the Project Media window and can be created as a reversed clip so you can create events that play backward on the timeline.

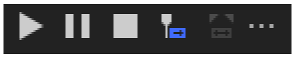
When a media file is placed in the Trimmer window, any regions or markers that were previously stored in the media file are displayed in the Trimmer.

TIP

- If you open a multichannel audio file in the Trimmer, you can choose which channels you want to display in the Trimmer window: right-click the waveform display, choose CHANNELS from the shortcut menu, and then choose a command from the submenu.
- If you open a multistream audio file in the Trimmer, you can choose which stream you want to display in the Trimmer window: right-click the waveform display, choose STREAM from the shortcut menu, and then choose a stream from the submenu.
- If you want to edit in the Trimmer window without updating the Video Preview window, right-click the media file in the Trimmer Window and clear the SHOW VIDEO IN PREVIEW WINDOW command.
- The ruler, scrollbar, and zoom controls may not be visible if there is not enough space to display them. Drag the horizontal splitter between the video monitor and the Trimmer timeline to adjust the height of the timeline.
- When the scrollbar is hidden, you cannot zoom in or out on the waveform.

Trimmer Transport Tool Bar

By default the Trimmer Transport tool bar shows the Play, Pause, Stop, Add to timeline from cursor, Fit to Fill, and the More button.



To access additional buttons click the More button ··· and click the button you wish to access.

To add a button to the Transport Toolbar:

1. Click the More button.
2. Click EDIT VISIBLE BUTTON SET.
3. Check the box next to the button to you would like to add, and click OK.

   The button will now be visible each time you open the application.

To remove a button from the Toolbar:

1. Click the More button.
2. Click EDIT VISIBLE BUTTON SET.
3. Uncheck the box next to the button to you would like to remove, and click OK.

Opening a media file in the Trimmer

Drag a file from the Windows Explorer, VEGAS Pro Explorer, or Project Media window to the Trimmer window. This method is sometimes more convenient than placing the entire media file on a track and then editing the event.

> **TIP**
> - You can automatically load a file into the Trimmer window by selecting the DOUBLE-CLICK ON MEDIA FILE LOADS INTO TRIMMER INSTEAD OF TRACKS checkbox on the General tab in the Preferences dialog. When this checkbox is selected, no events are created when you double-click a media file in the VEGAS Pro Explorer, or Project Media window. Instead, the Trimmer is displayed to allow you to choose the portion of the file you want to use. For more information, see General Tab
> - If you want to open the original media file that was used to create a subclip in the Trimmer, right-click a subclip in the Project Media window and choose OPEN PARENT MEDIA IN TRIMMER from the shortcut menu.

Opening an event in the Trimmer

Right-click the event and choose OPEN IN TRIMMER from the shortcut menu.

If you want to open the original media file that was used to create a subclip in the Trimmer, right-click an event and choose OPEN PARENT MEDIA IN TRIMMER from the shortcut menu.

> **NOTE** The entire media file—not just the contents of the current event—will be opened in the Trimmer.

Choosing Trimmer preview options

When you're editing in the Trimmer, you can choose to display video in the Video Preview window or in a video monitor within the Trimmer.

- If you want to display the Trimmer cursor position in the Video Preview window, right-click the media file in the Trimmer window and verify SHOW VIDEO MONITOR is not selected and then right-click the media file in the Trimmer window and select SHOW VIDEO IN PREVIEW WINDOW.

  When you click to position the cursor in the Trimmer window, the frame at the cursor position will be displayed in the Video Preview window, and the transport controls in the Trimmer window will play the current file in the Video Preview window.
- If you want to display a dedicated video monitor in the Trimmer window, right-click the media file in the Trimmer window and select SHOW VIDEO MONITOR. When the video monitor is on, you can -click the media file in the Trimmer window and select SHOW VIDEO FRAMES to show or hide video frames in the Trimmer timeline.
- If you want to display the Trimmer cursor position on an external monitor, select the TRIMMER ON EXTERNAL MONITOR button .

  If external monitor is enabled for the Trimmer and the Video Preview window, focus will determine which source is sent to the external monitor: click in the Trimmer window to send its video to your external monitor; click the timeline or track list to send its video to your external monitor.

> **TIP** If SHOW VIDEO FRAMES is selected, press Ctrl+Shift+Up to give more space to the video and Ctrl+Shift+Down to give more space to the audio. You can also right-click the audio or video timeline and choose VIDEO HEIGHT LARGER, AUDIO HEIGHT LARGER, or VIDEO AND AUDIO EQUAL HEIGHT from the shortcut menu.

Choosing multichannel/multistream audio options

When you're working with multichannel or multistream audio in the Trimmer, you can choose whether you want to add multichannel/multistream audio to the timeline when creating events.

Right-click the audio waveform in the Trimmer and select USE ALL STREAMS AND CHANNELS to allow VEGAS Pro to determine which audio streams and channels to use:

- When using surround AC3 or Windows Media, the stereo downmix stream will be used when adding media to a stereo project. When adding media to a 5.1 surround project, the surround stream will be used.
- In other cases, all streams and all channels will be added to the timeline.

When USE ALL STREAMS AND CHANNELS is not selected, only the stream and channels displayed in the Trimmer will be added to the timeline.

> **TIP** When the IMPORT STEREO AS DUAL MONO checkbox is selected on the General tab of the Preferences dialog, two-channel audio files will be added to the timeline as separate mono audio events on separate tracks. For more information, see General Tab

The audio events are grouped, and tracks that are created by adding media will be panned hard left and hard right. You can right-click the waveform in the Trimmer, choose CHANNELS, and then choose a command from the submenu to choose which channel is used for that event.

Moving frame by frame in the Trimmer window

As you navigate through a video file in the Trimmer, the exact frame that the cursor is over in time is displayed as in a thumbnail image under the cursor. When using the left and right arrow keys, this allows you to edit with frame accuracy.

You can also click the PREVIOUS FRAME and NEXT FRAME buttons to navigate frames in the Trimmer window.

> **TIP** Click and hold the PREVIOUS FRAME and NEXT FRAME buttons to move the cursor multiple frames.

Using hover scrub to navigate a clip

When ENABLE HOVER SCRUB is selected in the Trimmer shortcut menu, you can hover your mouse over the Trimmer video monitor to preview a specific part of the clip. When you start dragging, you start a selection (see next section).

> **TIP** Hover Scrub is enabled by default. Right-click the Trimmer window and choose ENABLE HOVER SCRUB to turn hover scrub off or on again. When hover scrub is off, you can still scrub the clip by dragging the cursor in the Trimmer timeline.

Selecting data

Perform any of the following actions to select data in the Trimmer window:

- Use the transport controls to play your media file. Press I or [to mark the beginning of the selection, and press O or] to mark the end of your selection.
- Drag in the Trimmer timeline or in the Video portion to select a range of data. When you drag from left to right you set set the In Point first and drag to the Out Point, when you drag from right to left the first click sets the Out Point and you drag to the In Point.
- A double click on the Trimmer window resets the In and Out Points to the beginning and end of the clip.
- If you know the timecode of the beginning and end of your selection, double-click the boxes at the bottom of the Trimmer window and type timecode values.

> **NOTE** To select only the audio or video portion of the media, right-click and choose SELECT AUDIO ONLY or SELECT VIDEO ONLY from the shortcut menu, or you can press Tab or Shift+Tab to cycle the selection among audio only, video only, or audio and video.

> **TIP** If SHOW VIDEO FRAMES is selected in the Trimmer shortcut menu, press Ctrl+Shift+Up to give more space to the video and Ctrl+Shift+Down to give more space to the audio. You can also right-click the audio or video timeline and choose VIDEO HEIGHT LARGER, AUDIO HEIGHT LARGER, or VIDEO AND AUDIO EQUAL HEIGHT from the shortcut menu.

Adding media to the timeline

> **TIP** When the IMPORT STEREO AS DUAL MONO checkbox is selected on the General tab of the Preferences dialog, two-channel audio files will be added to the timeline as separate mono audio events on separate tracks. For more information, see General Tab

The audio events are grouped, and tracks that are created by adding media will be panned hard left and hard right. You can right-click the waveform in the Trimmer, choose CHANNELS, and then choose a command from the submenu to choose which channel is used for that event.

Dragging a selection to the timeline

1. Open a media file in the Trimmer.
2. Select the portion of the file that you want to use.
3. Drag the selection to the desired track. The selection becomes a new event on the track. If the media file includes both audio and video, each is placed on a separate track.

   > **IMPORTANT** Because media selection is also performed by dragging it is important that you start dragging vertically to not accidentally destroy your selection.

Three-point editing

1. Open a media file in the Trimmer.
2. Mark the in and out points in your media file to create a selection:
    1. Click the PLAY button ▶ in the Trimmer to start playback, or click to position the cursor in the Trimmer timeline.
    2. Press [or I to mark the beginning of the selection.
    3. Press] or O to mark the end of the selection.

    > **TIP** You can also select two points in the timeline and a single point in the Trimmer to perform three-point editing. In this mode, ripple editing is not applied.
3. Position the cursor in the timeline where you want to add the event.
4. Click the ADD TO TIMELINE FROM CURSOR button to insert the selection after the cursor position in the currently selected track, or click the ADD TO TIMELINE UP TO CURSOR button to insert the selection before the cursor.

Four-point editing (using a Trimmer selection to fill a timeline selection)

1. Open a media file in the Trimmer.
2. Select the portion of the file that you want to use.
3. Select the portion of the timeline where you want to use the Trimmer selection.
4. Click the FIT TO FILL button. The Trimmer selection is time-compressed or stretched to fill the timeline selection.

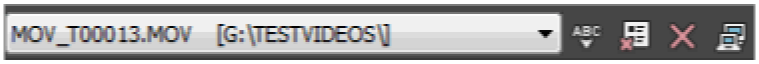
Overwrite timeline events with the Trimmer selection

The standard behavior of the Trimmer is to perform punch-in edits on the timeline: when you add media to the timeline, the events created by the Trimmer are laid over existing events on the timeline. You can delete or move the events you create with the Trimmer without changing the underlying events.

If you want to replace the contents of the timeline when creating events from the Trimmer, select the ENABLE TIMELINE OVERWRITE button. When ENABLE TIMELINE OVERWRITE is selected, ripple editing is not available.

Using the Trimmer History list

The drop-down box at the top of the Trimmer lists files and events that have been opened in the Trimmer.



MOV_T00013.MOV [G:\TESTVIDEOS\]

To open a recently used file, choose its file name from the Trimmer History drop-down list.

To sort the list, click the SORT TRIMMER HISTORY button. The files in the drop-down list are sorted in alphabetical order. To sort in reverse alphabetical order, hold the Ctrl key while clicking on the SORT TRIMMER HISTORY button.

To clear the list, click the CLEAR TRIMMER HISTORY button. All files in the history drop-down list are removed.

To remove a single file from the list, click the REMOVE CURRENT MEDIA FROM TRIMMER HISTORY button. The media file is removed from the Trimmer History drop-down list and the Trimmer window is blank.

Using markers and regions in the Trimmer

Adding markers or regions

1. Position the cursor or make a selection in the Trimmer window.

2. Press M (or click INSERT MARKER) to place a marker or R (or click INSERT REGION) to place a region.

   Trimmer markers and regions function identically to timeline markers and regions.

Saving Trimmer markers and regions

Click the SAVE MARKERS/REGIONS button . All markers and regions in the Trimmer are saved back into the file.

If you want to automatically save markers and regions to the file, select the AUTOMATICALLY SAVE TRIMMER MARKERS AND REGIONS WITH MEDIA FILE checkbox on the General tab of the Preferences dialog. For more information, see General Tab

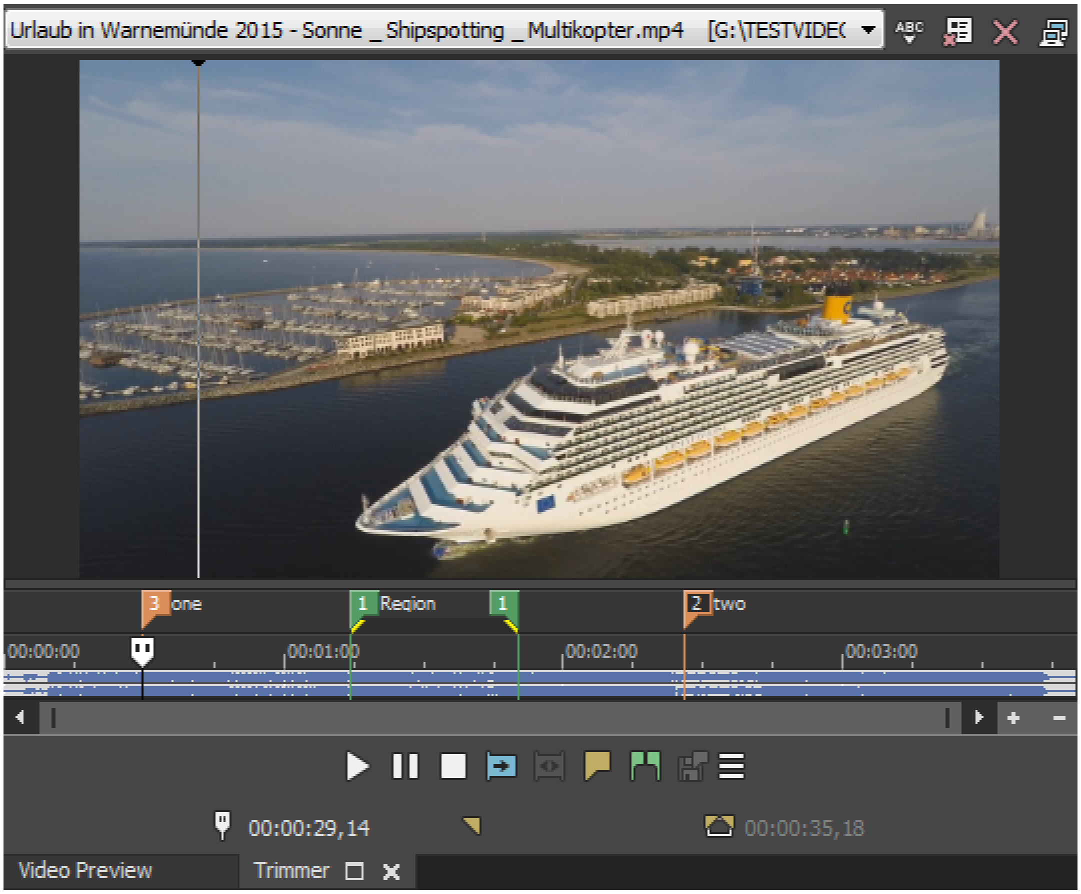
NOTE

- You cannot save markers and regions to a read-only file or to file types that VEGAS Pro cannot render. If markers and regions cannot be saved, the SAVE MARKERS/REGIONS button is unavailable.
- If the selected file type cannot save markers internally, VEGAS Pro will save the metadata to an external file with an .sfl extension (using the same base name as your media file).

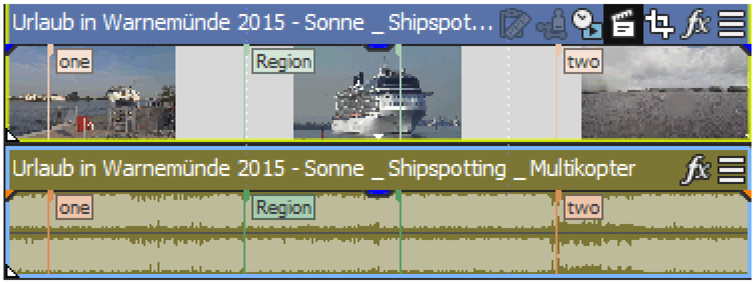
Viewing media markers and regions in events

From the View menu, choose EVENT MEDIA MARKERS to toggle the display markers (including XDCAM essence marks) and regions that are saved in a media file. These markers are displayed in the timeline in events that refer to the media file.

Media markers and regions cannot be edited within the event. However, when you edit the markers in markers and regions in the Trimmer window or in an external audio editor, the event will reflect your changes.


Urlaub in Warnemünde 2015 - Sonne _ Shipspotting _ Multikopter.mp4 [G:\TESTVIDE(
3 one
1 Region
1
2 two
00:00:00
00:01:00
00:02:00
00:03:00
00:00:29,14
00:00:35,18
Video Preview
Trimmer

Media markers/regions visible in Trimmer window


Urlaub in Warnemünde 2015 - Sonne _ Shipspot...
one
Region
two
Urlaub in Warnemünde 2015 - Sonne _ Shipspotting _ Multikopter
one
Region
two

Media markers/regions displayed in event

> **TIP**
>
> - From the View menu, choose EVENT MEDIA MARKERS, and then choose SHOW MARKER LABELS from the submenu to toggle the display of marker labels in events.
> - When media markers are displayed, you can use them as snap points for positioning the cursor and for edge-trimming if SNAP TO MARKERS is selected on the Options menu. If a media file's frame rate does not match your project frame rate, frame quantization will occur after the snap if QUANTIZE TO FRAMES is selected on the Options menu. For more information, see Enable snapping and Quantize to frames

Opening audio in an external audio editor

Right-click the audio waveform and choose OPEN IN AUDIO EDITOR to start your selected audio editor and open the audio event or audio portion of the file.

To change the default sound editor, click the BROWSE button next to the PREFERRED AUDIO EDITOR box on the Audio tab of the Preferences dialog.

Using subclips

Creating a subclip

1. Create a selection in the Trimmer window.
2. Click the CREATE SUBCLIP button . The Create Subclip dialog is displayed.

   > **TIP** When an event has been trimmed or split so it plays only a portion of an event, you can also right-click the event in the timeline and choose CREATE SUBCLIP from the shortcut menu to create a subclip using that portion of the media file.

3. In the NAME box, type the name you want to use to identify the subclip in the Project Media window. By default, the file name is used with a subclip number appended.
4. Select the REVERSE checkbox if you want the subclip to be played backward when you add it to your project.
5. Click OK to create the subclip. You can then create events from subclip via the Project Media window.

Selecting a subclip in its parent media

1. Right-click a subclip in the Project Media window and choose OPEN IN TRIMMER from the shortcut menu.
2. Right-click the Trimmer window and choose SELECT PARENT MEDIA from the shortcut menu. The subclip's original media file is opened in the Trimmer, and the portion of the media that represents the subclip is selected.

TIP If you want to open the original media file that was used to create the subclip in the Trimmer, right-click an event on the timeline (or a subclip in the Project Media window) and choose OPEN PARENT MEDIA IN TRIMMER from the shortcut menu.

Copying the current frame to the clipboard

Right-click the Trimmer window and choose COPY SNAPSHOT TO CLIPBOARD from the shortcut menu to copy the current frame to the clipboard.

Saving the current frame as a file

Right-click the Trimmer window and choose SAVE SNAPSHOT TO FILE from the shortcut menu to save the current frame as an image file.

The Save Snapshot to File dialog is displayed to allow you to choose the format and location where you want to save the file. The file is automatically added to the Project Media window.

Opening files in the Trimmer by default

You can automatically load files into the Trimmer window by selecting the DOUBLE-CLICK ON MEDIA FILE LOADS INTO TRIMMER INSTEAD OF TRACKS checkbox on the General tab in the Preferences dialog. For more information, see [General Tab]

When this checkbox is selected, no events are created when you double-click a media file in the VEGAS Pro Explorer or Project Media window. Instead, the Trimmer is displayed to allow you to choose the portion of the file you want to use.

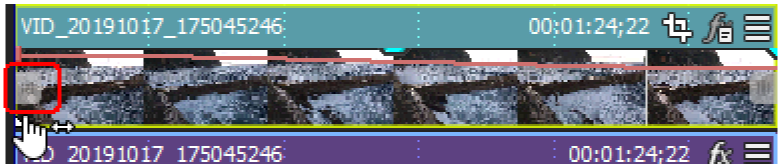
Adjusting an event's length

You can use any of the following methods to adjust events.

Trimming the start or end of an event with your mouse

With the Normal tool selected, drag either end of an event.

To make it easier to grab the edges of the event, handles are displayed as soon as you move the mouse over them.



You can deactivate the display of these handles by selecting the corresponding entry in the MORE ··· button of the event.

The event edge will snap to grid lines or markers if ENABLE SNAPPING is selected or will snap to frame boundaries if QUANTIZE TO FRAMES is selected; you can hold the Shift key while dragging to temporarily override the current snapping setting. For more information, see [Enable snapping] and [Quantize to frames]

> **TIP** Hold `Shift` while dragging the event edge to ignore event grouping for fast J and L cuts.

> **NOTE** If you drag the end of the event past the end of the media file, the event will repeat if the LOOP event switch is turned on; if the switch is turned off, silence is drawn. For more information, see [Applying switches to events]

Trimming an event to the cursor position

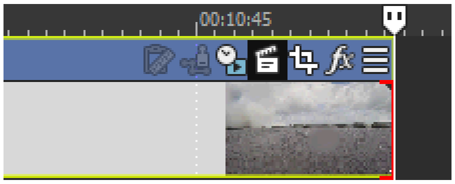
1. Select the Normal tool .
2. Select the event you want to trim.
3. Position the cursor at the point where you want the event to start or end.
4. Trim the start or end of the event:
    - Click the TRIM START button (or press Alt+[) to trim the start of the event to the cursor position.
    - Click the TRIM END button (or press Alt+]) to trim the end of the event to the cursor position.

Using keyboard shortcuts to edge trim events

With this method, you can quickly jump through your project and adjust cuts until they're perfectly synchronized. If you have an external multimedia controller, it's even easier. For more information, see [Using a multimedia controller]

1. If you want downstream events to ripple as you trim, click the AUTO RIPPLE button to turn on Auto Ripple mode. For more information, see [Post-edit ripple]
2. Select the event you want to trim.

3. Press [or] (or 7 or 9 on the numeric keypad) to move the cursor to the event edge you want to trim. [or 7 selects the beginning of an event or moves to the previous event edge.] or 9 selects the end of the event or moves to the next event edge. A red bracket is displayed to indicate which event edge will be trimmed.



4. Use the 1, 3 and 4, 6 keys on the numeric keypad to trim the current event edge:
   - Press 1 to trim one video frame left, or press 3 to trim one video frame right (or hold Ctrl+Shift+Alt while rolling the mouse wheel).
   - Press 4 to trim one screen pixel left, or press 6 to trim one pixel right (or hold Ctrl+Shift while rolling the mouse wheel). Depending on the current zoom level, the trim duration will vary.
   - Hold Ctrl while pressing 1 to time compress one frame left, or press 3 to time stretch one frame right.
   - Hold Ctrl while pressing 4 to time compress one pixel left, or press 6 to time stretch one pixel right.
   - Hold Alt while pressing 1 to slip trim (the media moves with the event edge) one frame left, or press 3 to slip trim one frame right.
   - Hold Alt while pressing 4 to slip trim one pixel left, or press 6 to slip trim one pixel right.
   - Hold Ctrl+Alt while pressing 1 to slide a crossfade or transition one frame left, or press 3 to slide one frame right (adjacent trim).
   - Hold Ctrl+Alt while pressing 4 to slide a crossfade or transition one pixel left, or press 6 to slide one pixel right (adjacent trim).

> **TIP**
>
> Pressing 5 on the numeric keypad exits edge-trimming mode. If you are not in edge-trimming mode, press 1, 3, 4, and 6 on the numeric keypad to nudge events on the timeline by frame (1 and 3) or by pixel (4 and 6).
>
> Hold Shift while dragging the event edge to ignore event grouping for fast J and L cuts.

5. Repeat steps 3 and 4 as necessary.

Trimming adjacent events

Use the Slide tool or h old Ctrl+Alt while dragging the event edge between two events.

The mouse pointer is displayed as a an . The edges of the selected event and the adjacent event are trimmed simultaneously in the direction you drag.

> **TIP** Hold Ctrl+Alt+Shift while dragging the event edge between two events to ignore event grouping for fast J and L cuts. If you are using the Slide tool, hold Shift to ignore event grouping.

Trimming all but the selected portion of an event

1. Drag to make a timeline selection (or hold down the Shift key and use the arrow keys to make the selection).

2. Click the TRIM button (or press Ctrl+T) to delete all data outside of the selection. For more information, see Trimming events

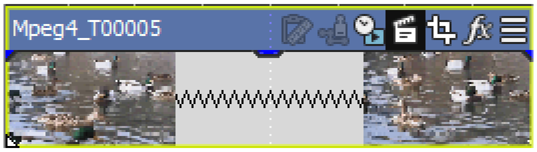
Time-stretching an event

> **NOTE** The RESAMPLE AND STRETCH QUALITY setting on the Audio tab of the Project Properties dialog determines the quality of processing when time-stretching audio events. For more information, see Setting project properties

To change the duration of an event without changing its contents, use the Time Stretch/Compress tool or hold Ctrl while dragging the right or left edge of an event.

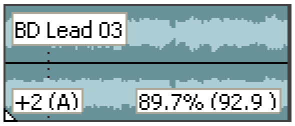
The mouse pointer is displayed as a . You can use the TIME STRETCH/PITCH SHIFT controls in the Event Properties dialog to specify whether the pitch of an audio event will be preserved while stretching. For more information, see Editing event properties

As you drag the edge of a video event, a zigzag line is displayed between video frames to show you that the event has been stretched:



For more information about the Time Stretch/Compress tool, see Editing Tool

If ACTIVE TAKE INFORMATION is selected from the View menu, audio events will display a percentage in the lower-right corner of the event to indicate the playback rate after stretching. If the media has a known tempo, the effective playback tempo (after stretching) is listed in parentheses after the stretch amount.



> **TIP** You can also use the Slow Motion plug-in for a high quality slow motion effect!

Slip-trimming an event

Use the Slip tool or hold Alt while dragging the right or left edge of an event. The slip-trim cursor is displayed.

As you drag the event edge, the opposite edge of the event will remain fixed, trimming the media from the edge you drag.

TIP

- Use the Slip tool or hold Shift or hold Alt+Shift while dragging any portion of an event to slip-trim the right edge. The left edge of the event will remain fixed on the timeline, and the media is slipped past the left edge of the event. This slip mode is useful when you want to slip an event without changing its last frame.
- Use the Split Trim tool or hold Ctrl+Alt+Shift and drag an event to split it at the point you click and trim the event in the direction you drag (eraser mode).

  For more information, see Slipping and sliding events

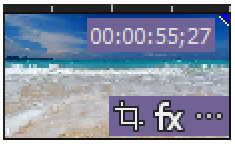
  Holding the Shift key temporarily overrides snapping if it is enabled. Release the Shift key while dragging to snap the event to available snap points.

  For more information about the Split Trim tool, see Editing Tool
- If you want to slip all of an event's takes when slipping media, choose SLIP ALL TAKES from the Options menu. For more information, see Using takes as alternate versions of events

For more information about the Slip tool, see Editing Tool

Event Length Display

You can display the length of an event in the event header.



Adding a Event Length button to the event header

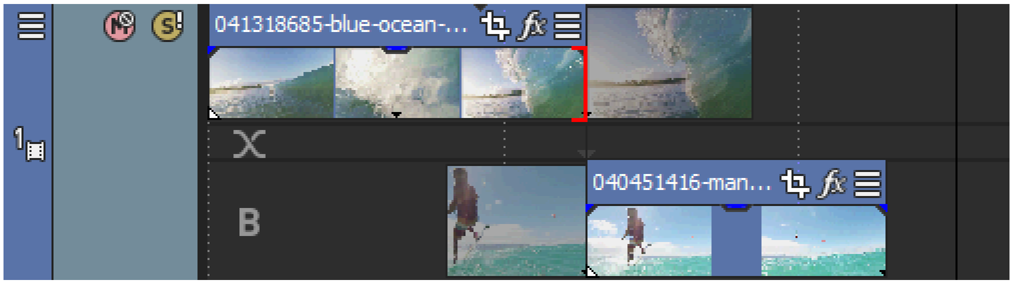
1. Click the MORE ⋯ button and choose EDIT VISIBLE BUTTON SET from the list.
2. Click the EVENT LENGTH checkbox.

Expanded edit mode

Expanded edit mode takes the best of edge-trimming and A/B-roll editing to provide a fast, accurate method of trimming events.

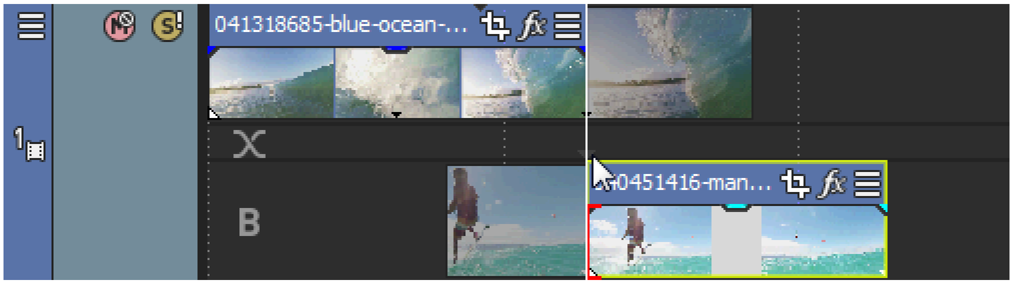
1. Select the event you want to edit.
2. Perform any of the following actions to enter expanded edit mode:
   - Choose EDIT | SELECT | ENTER EXPANDED EDIT MODE.
   - Press 5 on the numeric keypad.
   - Double-click the event edge.

   In expanded edit mode, a red bracket is displayed to indicate which event edge will be trimmed, and the track is displayed in an A/B roll: events before the edit point are displayed in the A roll and subsequent events are displayed on the B roll. Additional frames available for editing are shown on the other side of the edit point:



   The Video Preview window displays a split-screen preview so you can monitor frames on both sides of the edit point.

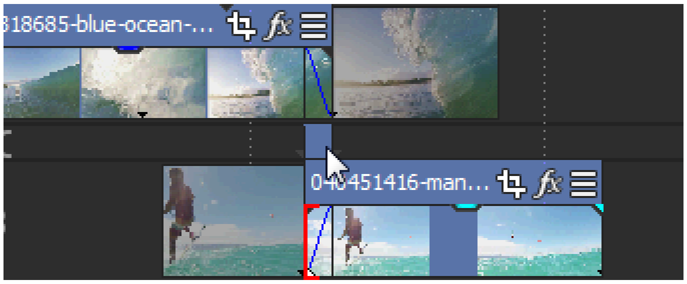
3. Drag event edges of the edit point or use the 1, 3 and 4, 6 keys on the numeric keypad to trim the current event edge:



- Drag the transition/crossfade between two events — or drag the cut arrow between the track layers — to perform an adjacent trim. Red brackets are drawn on both event edges to indicate that both events are being trimmed. You can also hold Ctrl+Alt while dragging an event edge to perform an adjacent trim.
- Press 1 to trim one video frame left, or press 3 to trim one video frame right (or hold Ctrl+Shift+Alt while rolling the mouse wheel).
- Press 4 to trim one screen pixel left, or press 6 to trim one pixel right (or hold Ctrl+Shift while rolling the mouse wheel). Depending on the current zoom level, the trim duration will vary.
- Hold Ctrlwhile pressing 1 to time compress one frame left, or press 3 to time stretch one frame right.
- Hold Ctrlwhile pressing 4 to time compress one pixel left, or press 6 to time stretch one pixel right.
- Hold Alt while pressing 1 to slip trim (the media moves with the event edge) one frame left, or press 3 to slip trim one frame right.
- Hold Alt while pressing 4 to slip trim one pixel left, or press 6 to slip trim one pixel right.
- Hold Ctrl+Alt while pressing 1 to slide a crossfade or transition one frame left, or press 3 to slide one frame right (adjacent trim).
- Hold Ctrl+Alt while pressing 4 to slide a crossfade or transition one pixel left, or press 6 to slide one pixel right (adjacent trim).

> **TIP** Pressing 5 on the numeric keypad exits expanded edit mode. If you are not in expanded edit mode, press 1, 3, 4, and 6 on the numeric keypad to nudge events on the timeline by frame (1 and 3) or by pixel (4 and 6).

4. You can select the next point you want to edit using either of the following methods:
    - Click another event edge on the timeline.
    - Click the indicator between the A and B roll:



    - Press [or] (or 7 or 9 on the numeric keypad) to move the cursor to the event edge you want to trim.
5. Repeat steps 3 and 4 as needed.
6. To exit expanded edit mode and return to the previous window layout; perform any of the following actions:
    - Choose EDIT | SELECT | EXIT EXPANDED EDIT MODE.
    - Press 5 on the numeric keypad.
    - Double-click the event edge.
    - Press Esc.

For more information, see Saving and recalling window layouts

Slipping and sliding events

To help you picture what happens when you slip and slide events, think of an event as a window to a media file. The window can display the entire media file or a small section. When the window displays only a portion of the media file, you can move either the window or the underlying media to adjust the media that is played by an event:

- When you slip an event, your event maintains its place on the timeline, but the media file moves in the direction you drag.

- When you slide an event, the media file maintains its place on the timeline, but the event moves in the direction you drag.

> **TIP** If you want to slip all of an event's takes when slipping media, make sure SLIP ALL TAKES is selected in the Options menu. For more information, see Using takes as alternate versions of events

Shifting the contents of (slipping) an event

Use the Slip tool or hold Alt while dragging an event. The slip cursor is displayed.

As you drag the event, the contents of the event shift, but the event will not move. You can use this technique when you want to maintain an event's length and position, but have the event play a different section of the source media file.

For more information about the Slip tool, see Editing Tool

Slip-trimming an event

Use the Slip tool or hold Alt while dragging the right or left edge of an event. The slip-trim cursor is displayed.

As you drag the event edge, the opposite edge of the event will remain fixed, trimming the media from the edge you drag.

TIP

- Use the Slip tool and hold Shift or hold Alt+Shift while dragging any portion of an event to slip-trim the right edge. The left edge of the event will remain fixed on the timeline, and the media is slipped past the left edge of the event. This slip mode is useful when you want to slip an event without changing its last frame.
- Use the Split Trim tool or hold Ctrl+Alt+Shift and drag an event to split it at the point you click and trim the event in the direction you drag (eraser mode).

  Holding the Shift key temporarily overrides snapping if it is enabled. Release the Shift key while dragging to snap the event to available snap points.

  For more information about the Split Trim tool, see Editing Tool
- If you want to slip all of an event's takes when slipping media, choose SLIP ALL TAKES from the Options menu. For more information, see Using takes as alternate versions of events

For more information about the Slip tool, see Editing Tool

Sliding an event

Use the Slide tool or hold Ctrl+Alt while dragging an event. The slide cursor is displayed.

As you drag, the relative position of the media remains fixed on the track, and the event position changes. You can use this technique when you want to maintain an event's length, but have the event play a different section of the source media file at a different point in your project.

For more information about the Slide tool, see Editing Tool

Sliding a crossfade or transition

Use the Slide tool or hold Ctrl+Alt while dragging the overlapping area between two events. The slide cursor is displayed.

As you drag, the relative position of the media remains fixed on the track, and crossfade position changes, effectively trimming the edge of the event in the direction you drag. You can use this technique when you want to maintain the length of two combined events, but want the transition to occur earlier or later.

For more information about the Slide tool, see Editing Tool

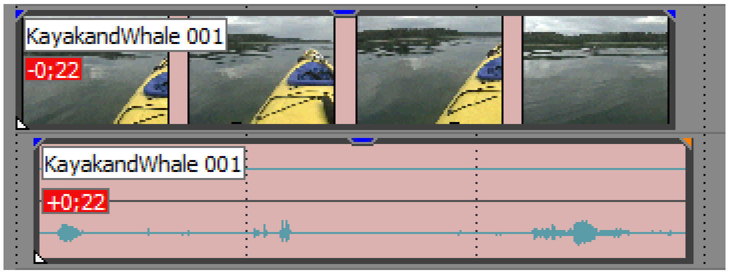
Repairing audio/video synchronization offsets

When audio and video events (or events from multichannel audio files) are not aligned, VEGAS Pro will highlight the events in the timeline so you can see synchronization problems at a glance.

The software determines whether events are synchronized by comparing grouped and overlapping events:

- An event in a group is compared to other events in the same group (of the opposite media type) that were created from the same media, and the events with the most overlap are used to calculate synchronization. If no events overlap, the closest events are used to calculate synchronization.
- An event that is not in a group is compared to events (of the opposite media type) that were created from the same media, and the events with the most overlap are used to calculate synchronization. If no events overlap, no synchronization offset is displayed.

  In the following example, the overlapping audio and video events were both created from KayakandWhale 001.avi and will be compared to determine synchronization.



> **NOTE** The amount of offset is displayed when ACTIVE TAKE INFORMATION is selected from the View menu. Very small offsets that are below the resolution of the timeline may be displayed as 0.00. Set the project time format to samples to see the offset amount. For more information, see Time ruler

To restore synchronization, right-click the audio or video event you want to synchronize, choose SYNCHRONIZE from the shortcut menu, and then choose a command from the submenu:

Item	Description
By Moving	Moves the event you clicked so it is synchronized to its corresponding audio or video event. In the sample events above, the audio event would move to the left if you right-clicked it and chose SYNCHRONIZE | BY MOVING. If you right-clicked the video event and chose SYNCHRONIZE | BY MOVING, it would move to the right.
By Slipping	Slips the contents of the event you clicked so the audio and video are synchronized. The events do not move, but the contents of the event you right-click are shifted forward or backward to restore synchronization. For more information about slipping, see Slipping and sliding events

Add missing streams

If you had loaded a video file with audio streams via the VIDEO ONLY or AUDIO ONLY option or if you deleted one of the two media events referring to a video file (by ungrouping it first or with EDIT | GROUP | REMOVE FROM) you can quickly recreate the media event for the missing audio or video stream that is stored in the media file.

1. Right-click the event and choose ADD MISSING STREAM FOR SELECTED EVENT.
2. A new track is created directly below (audio stream) or above (video stream) the clicked event containing an event of the same length and start time with the cor-

responding media stream.

The two events are grouped

FURTHER INFORMATION
Adding media files to your project

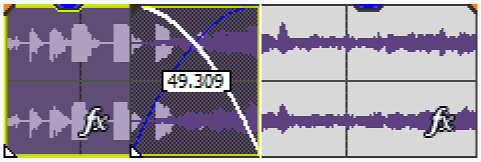
Event envelopes

You can apply envelopes to audio and video events to change settings over time:

- Audio event envelopes allow you to control an event's fade-in, fade-out, and overall level.
- Video event envelopes allow you to control an event's fade-in, fade-out, opacity, and velocity.

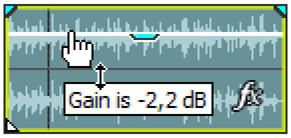
> **NOTE** An envelope is specific to the track upon which it is applied. Event-specific envelopes will be calculated after the track fader.

> **TIP**
> Select EVENT FADE LENGTHS from the View menu if you want to display fade lengths in selected events:



Adjusting an audio event's volume

1. Hover over the top of an audio event.
2. When you see the envelope cursor (👆), drag the volume line to the desired level. As you drag the line, the event’s gain is displayed in dB.



TIP

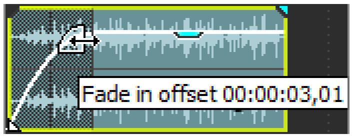
- Hold `Ctrl`(or hold the right mouse button) while dragging the sustain portion of the envelope to adjust the value in fine increments.
- When you have multiple events selected, the gain of all selected events is adjusted simultaneously.

Fading an audio event in or out

1. Hover over upper-left or upper-right corner of an audio event until the cursor is displayed as a .

   NOTE Fades between overlapping events cannot be adjusted when automatic crossfades are enabled. For more information, see Automatic crossfades

2. Click the corner of the event and drag to create a fade.

   To remove a fade, drag the end of the fade curve back to the edge of the event.

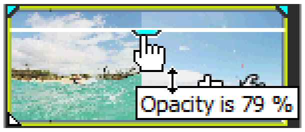
   TIP When you have multiple events selected, the fade of all selected events is adjusted simultaneously.

Adjusting a video event's opacity

Opacity envelopes adjust the transparency of an event, allowing it to fade in over a background. This background can be another video event or a background color.

For more information about compositing, see Compositing and masks

1. Hover over the top of a video event.
2. When you see the envelope cursor ( ), drag the opacity line to the desired level. As you drag the line, the event's opacity is displayed as a percentage. As opacity decreases, the event becomes more transparent.



Opacity is 79 %

> **TIP**
> - Hold Ctrl (or hold the right mouse button) while dragging to adjust the envelope in fine increments.
> - When you have multiple events selected, the opacity of all selected events is adjusted simultaneously.

Fading a video event in or out

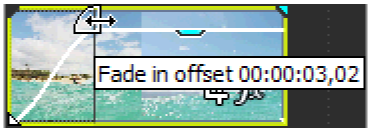
You can adjust the opacity at the beginning and end of a video event to fade in or out over a background. This background can be another video event or a background color.

For more information about compositing, see Compositing and masks

1. Hover over upper-left or upper-right corner of a video event until the cursor is displayed as a .

> **NOTE** Fades between overlapping events cannot be adjusted when automatic crossfades are enabled. For more information, see Automatic crossfades

2. Click the corner of the event and drag to create a fade.



Fade in offset 00:00:03,02

To remove a fade, drag the end of the fade curve back to the edge of the event.

> **TIP** When you have multiple events selected, the fade of all selected events is adjusted simultaneously.

Adjusting a video event's velocity

Velocity envelopes are used to change the speed of a video event over time. For example, you could use a velocity envelope to play a clip in slow motion.

Each video event in your project has a specific duration that is not changed by velocity envelopes. Therefore, if you decrease the speed of a ten-second video event by 50%, only five seconds of video will be shown. On the other hand, if the speed is increased 200%, the ten seconds of video will play in only five seconds. The remaining five seconds of the event will be filled either with a freeze of the last frame or with ten additional seconds of video content from the media file.

1. Right-click a video event, choose INSERT/REMOVE ENVELOPE from the shortcut menu, and then choose VELOCITY from the submenu. A velocity envelope is drawn on the event.
2. Drag the envelope up to increase the playback speed of the event, or drag down to decrease its speed.

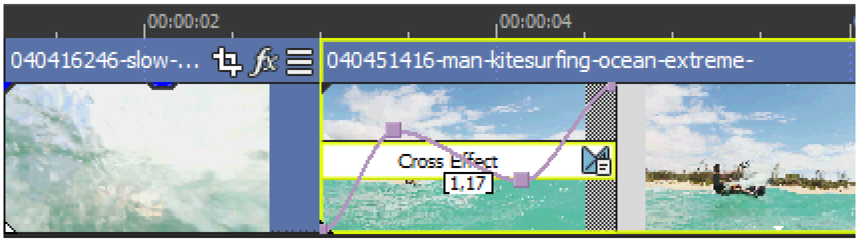
> **TIP**
>
> - Right-click an envelope point and choose a command from the shortcut menu to choose from velocity presets from 100% reverse-speed playback to 0% playback (a freeze-frame effect) up to 300% (triple-speed) playback.
> - Setting a velocity envelope to a negative value will cause the event to play in reverse. Video events can only be reversed if there is media to reverse: an event cannot be reversed past the beginning of a media file. An event that has been reversed will play backward until it gets to the first frame and will then hold that frame for the duration of the event.

Adding a transition progress envelope

Normally, a transition progresses from 0 to 100% in a linear fashion over the length of the transition. A transition progress envelope gives you complete control over a transition: you can hold, reverse, and repeat individual transitions.

1. Select a transition.
2. From the Insert menu, choose VIDEO ENVELOPES, and then choose TRANSITION PROGRESS from the submenu. An envelope is added to your transition.
3. Add points and adjust the fade curves as desired. For more information, see [Adjusting envelopes](#)

   In the following example, the transition starts, progresses to 50%, reverses direction, and then finishes.



Changing the fade curve type

1. Hover over the edge of a fade until the cursor is displayed as a , or hover over an envelope segment.
2. Right-click to display the FADE TYPES shortcut menu, and choose a fade type to set the speed of the fade.

Adding a Freeze Frame at Cursor Position

Sometimes you might want a video to stop momentarily, e.g. for inserting a title or a special transition. To stop the motion quickly, use the FREEZE FRAME AT CURSOR command.

1. Place the cursor where you want the freeze frame to occur.
2. Right click the video event and choose INSERT/REMOVE ENVELOPE | FREEZE FRAME AT CURSOR.

A velocity curve is added at the cursor position and the velocity is set to 0 which results in a still frame that is kept until the end of the video event.

The command is also available from the event's MORE ⋯ button, so if you use this feature often, you can add a button on the event's header so you can create you freeze frames with one click. .

For more information, see Track List

TIP Hint:

You can add a freeze frame to multiple events accros multipe tracks simulteanously:

1. Place the cursor where you want the freeze frame to happen in all the events
2. Ctrl+click each event to select multiple events.
3. Right-click anyone of the selected events and choose INSERT/REMOVE ENVELOPE | FREEZE FRAME AT CURSOR.

Stabilizing Video Clips

Video stabilization smooths out undesired picture movements by negating inadvertent movements in the image. This produces unusable edges in the footage that are cropped off automatically by zooming into the picture. The result: A more stable picture at a nearly imperceptibly increased zoom level.

Event FX or Media FX?

You can use the video stabilization either as a Media FX or as an Event FX.

Event	Media
Only the section of the media file referred by the event is analyzed.	The motion analysis is done over the whole media file and can take a long time
Changing the event's start and/or time in the media file makes the analysis invalid and it has to be repeated.	The motion analysis covers the whole file so event editing is possible after applying stabilization.
Point visualization options are available in Expert Mode.	Point visualization in Expert mode is not available

When using as a Media FX:

1. In the PROJECT MEDIA window, select the video you want to stabilize.
2. From the Tools menu, choose VIDEO, and then choose MEDIA FX (or right-click a media file in the Project Media window and choose MEDIA FX from the shortcut menu). The Plug-In Chooser is displayed.

TIP
If you're using only a portion of a longer media file, you can use the Trimmer window to create a sub-clip that contains only the portion of the media that is used in your project. Stabilizing a sub-clip requires less processing than stabilizing a full media file.

For more information, see Using the Trimmer

> **TIP** You can access the Media FX also via the MORE ··· button of a video event, where you also can add a button for it in the event header. The Media FX button in the header also functions as an indicator, whether a Media FX is applied (fx) or not (fx).

When using as an Event FX:

1. Click the Event FX button *fx* at the event. The Plug-In Chooser is displayed.
2. In the Plug-In Chooser, select the VIDEO STABILIZATION plug-in and click the ADD button. The Media FX dialog displays the VIDEO STABILIZATION plug-in.

Complexity Levels

Video stabilization can work in three different complexity levels. Switch between these levels with the USER VIEW drop-down list. In the initial BASIC view there are few controls and most everything works automatically. If you don't get the results you want in Basic mode, click the Reset button and switch to either Professional or Expert mode to try again.

Here we proceed to explain the controls that are revealed when you chose the PROFESSIONAL mode. The EXPERT view has even more controls which are covered at the end of this section.

- In the PARAMETERS section:
  - Choose either FAST or ACCURATE mode from the drop-down menu to specify whether you want faster or more accurate analysis.
  - With MOTION COMPENSATION you chose which kind of motion in the video is taken into account when analyzing the motion compensation.
- Click ANALYZE MOTION to start the analysis. The process will take some time depending upon the chosen mode, the length of the file, and other factors. When the analysis is complete, the stabilization is automatically applied to your media.

> **NOTE** You cannot change the method of the analysis without doing the analysis again. For this, click CLEAR MOTION DATA to discard the motion analysis, make your changes and run the analysis again.

- Start the playback of the clip and check the result of the stabilization. Perform any necessary adjustments in the STABILIZATION OPTIONS and **Borders section** parameters.

  There are two different modes of stabilization available, SMOOTH MOTION and FREEZE MOTION

  SMOOTHING The camera movement always consists of many small, fast, and unintentional movements and shaking, along with any intentional movements like pans, zooms or travel that must be kept. Smoothing is the parameter that helps to define how much "unsteadiness" should be kept in a scene, the higher that factor is, the more the movements are smoothed.

FREEZE MOTION In the Freeze motion mode it is assumed that there was no intended camera movement at all in the scene. Select one frame of the video with the REFERENCE FRAME NUMBER slider that defines the reference view that should be kept. All other frames before and after this frame will be transformed according to the detected motion to keep this view.

BORDERS: When the picture is moved in one direction to compensate for an unintended camera movement black borders will appear at the opposite edge. To avoid this, the picture is zoomed by a certain amount that is set by the ADDITIONAL ZOOM factor. An optimal value for ADDITIONAL ZOOM is calculated when the AUTO ZOOM box is checked, but you can freely change this value to keep as much image information as possible. You can further fine tune this with the ADDITIONAL ROTATION and ADDITIONAL TRANSLATION parameters. Keep in mind that these parameters are automatable, so you can apply these corrections only where they are necessary.

EDGE FILLING: For the cases where borders cannot be avoided, you can define how these borders are filled to make the zoom as unnoticeable as possible:

- TRANSPARENT:
  Results in black borders (or video from the track below showing through).
- MIRROR PADDING:
  The video content is mirrored at the edge.
- REPEAT:
  The video content is repeated from the opposite edge of the video.
- CLAMP TO EDGE:
  The last usable pixel is repeated.

> **TIP** You can also automate the Edge Filling mode.

MOTION BLUR: In addition to stabilizing the video, you can add motion blur to it. Motion blur occurs when a camera was moved quickly like in a fast pan shot. Because this "error" is so familiar, pan shots from modern cameras that don't have motion blur, such as those in mobile phones, look unnatural to us.

Activate ADD MOTION BLUR to create artificial motion blur from the detected camera movement. You can adjust how quickly the motion blur starts on a pan with the THRESHOLD, which specifies how far (i. e. how many pixels) the camera has to be moved from one frame to the next for motion blurring to start.

Additional controls of the Expert mode

In Expert mode you get additional controls to fine tune the analysis accuracy with internal parameters of the analysis algorithm. When you switch between the ACCURATE and FAST methods you see that they are in fact just preset combinations of these parameters and thus many more combinations are possible to find the best working one for your specific footage.

SMOOTHING PARAMETERS animation: Expert mode provides additional Smoothing control parameters. Animate buttons for each of the different components of detected motion enable you to activate or de-activate each motion component separately over time to even better separate intended from unintended motion.

VISUALIZATION: Click SHOW POINTS to see points of interest (feature points) and their tracking vectors over the next frames. The track length of the vector indicates the number of frames a feature point could be tracked though the video. To hide points with a shorter track length increase the MINIMUM TRACK LENGTH value, so you see only points with a longer track length that are more likely the correctly tracked ones.

The feature point visualization has some restrictions:

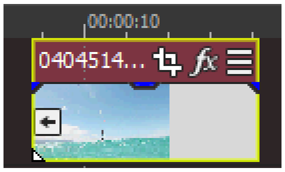
- It works only when Video Stabilization is applied as an Event FX
- The point data are not stored in the project file, so feature points are only available after the analysis until the end of the session. If you want to see them later in a saved project, you have to clear and re-analyze the motion data.
- There's no real-time update of the point visualization during video playback, but you can seek on the timeline to see the points in a different part of the video.

Reversing an event

Reversed events are perfect for backward guitar solos, creating the illusion of turning back time, or whatever else you can dream up. The event plays backward on the timeline without affecting the source media.

1. Right-click an audio or video event in the timeline.
2. Choose REVERSE from the shortcut menu. The event is reversed on the timeline, and a subclip is created in the Project Media list for the reversed event. For more information about subclips, see [Using the Trimmer](#)

   An arrow is displayed on the event to indicate that it has been reversed:



Using takes as alternate versions of events

You can use takes to associate multiple media files with an event.

For example, if you create multiple versions of a voiceover event or multiple camera angles of a video event, you can maintain all the takes in your project. By specifying which take should be used before playback or rendering, you can maintain several drafts of your project in a single project file.

For information about using takes for multicamera editing, please see [Editing multicamera video](#)

TIP

- When you open a copy of an event in a sound editor, VEGAS Pro automatically creates a copy of the event and saves it as a take within the event. For more information, see [Opening a copy of an event in an audio editor](#)
- If you want to slip all of an event's takes when slipping media, make sure SLIP ALL TAKES is selected in the Options menu. For more information, see [Slipping and sliding events](#)

Creating an event with multiple takes

1. In the Project Media or Explorer window, hold Ctrl or Shift while clicking the media files you want to use as takes.
2. Right-click and drag the media files to the location on the timeline. A shortcut menu is displayed when you release the mouse button.
3. From the shortcut menu, choose ADD AS TAKES.

   A single event is created, but you can choose which of the media files you want the event to play by choosing the active take for the event.

Adding a take to an event

1. Right-click and drag the media file from the Project Media or Explorer window to an event on the timeline. A shortcut menu is displayed when you release the mouse button.
2. From the shortcut menu, choose ADD AS TAKES.

   The media file is added to the event as the active take, and the original media file remains in your project as a take.

Choosing the active take in an event

1. Right-click the event that contains the takes.
2. From the shortcut menu, choose TAKE, and select CHOOSE ACTIVE from the submenu. The Take Chooser dialog box appears.
3. Click the take you want to use and click OK.

   Click the PLAY ▶ and STOP ■ buttons in the Take Chooser dialog box to preview takes.

Deleting the active take in an event

From the Edit menu, choose TAKE, and choose DELETE ACTIVE from the submenu.

Deleting a take from an event

1. Right-click the event that contains the take.
2. From the shortcut menu, choose TAKE, and choose DELETE from the submenu. The Take Chooser dialog box appears.
3. Click the take you want to delete and click OK.

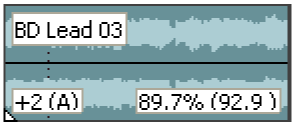
Switching between takes

1. Right-click the event that contains the takes.
2. From the shortcut menu, choose TAKE, and choose either NEXT TAKE or PREVIOUS TAKE from the submenu.

   > **TIP** Press T or Shift+T to choose the next or previous take for the selected event.

Displaying take information in events

From the View menu, choose ACTIVE TAKE INFORMATION to display the current take information on events in the timeline.



Pitch shifted audio events will display the amount of pitch Shift in the bottom-left corner of the event. If the media has a known root note, the new root is displayed in parentheses.

Stretched audio events will display a percentage in the lower-right corner of the event to indicate the stretched playback rate. If the media has a known tempo, the effective playback tempo (after stretching) is listed in parentheses after the stretch amount.

Audio and video events that are not synchronized will be highlighted in the timeline, and the amount of offset will be displayed. Very small offsets that are below the resolution of the timeline may be displayed as 0.00. Set the project time format to samples to see the offset amount.

For more information, see Repairing audio/video synchronization offsets and Time ruler

Grouping events

After you've arranged your events so they're just where you want them, you can create groups to lock the events together. Once grouped, you may apply editing tasks to the entire group of events.

> **TIP** When the CUT, COPY, AND DELETE GROUPED EVENTS checkbox on the Editing tab of the Preferences dialog is selected, cutting, copying, or deleting an event will affect all events in the same group. For more information, see Editing Tab

Creating a group of events

1. Select the events you want to group together.
2. From the Edit menu, choose GROUP, and choose CREATE NEW from the submenu (or press G).

> **NOTE** When you add media to the timeline, the events for the audio and video stream are grouped automatically.

Adding an event to an existing group

1. Right-click an event in the existing group, choose GROUP from the shortcut menu, and choose SELECT ALL from the submenu to select all of the members of the group.
2. Press `Ctrl` and click the event to be added to the group.
3. Right-click the event, choose GROUP from the shortcut menu, and choose CREATE NEW from the submenu.

> **NOTE** Events can only be in one group at a time. Adding an event to an existing group essentially clears the old group and creates a new one that includes all of the selected events.

Removing an event from a group

Right-click the event you want to remove, choose GROUP from the shortcut menu, and choose REMOVE FROM from the submenu. The event is removed from the group.

Clearing a group

You can ungroup all events by clearing the entire group. Clearing a group does not remove events from your project.

Right-click one of the members of the group, choose GROUP, and choose CLEAR from the submenu.

Temporarily ignoring grouping

Select the IGNORE EVENT GROUPING button (or press Ctrl+Shift+U) to override event groups without removing the groups.

To move a single object of a group without moving the other group members:

1. Click and hold the right mouse button.
2. Click the left mouse button and drag the object to the new position.
3. Release both mouse buttons.

   > **NOTE** This works only with the Normal Edit Tool.

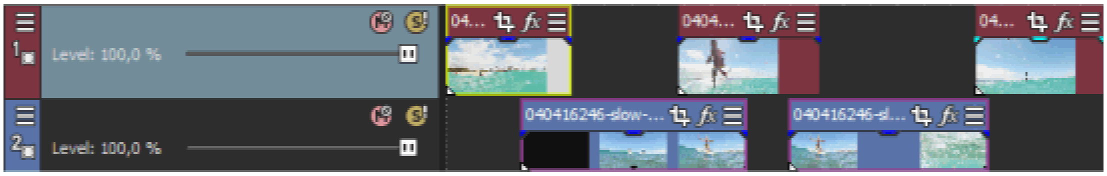
Cutting, copying, or deleting grouped events

1. Select the events you want to cut or delete.
2. From the Edit menu, choose GROUP, and choose CUT ALL, COPY ALL, or DELETE ALL from the submenu. The selected events and any events that are grouped with the selected events are deleted or copied/cut to the clipboard.

Using sync links

Sync links are like one-way event groups. A linked event stays synchronized with the event to which it is linked, but not the other way around. Linked events do not contribute to the affected tracks for ripple editing. Sync links are useful for keeping additional audio mix and video compositing elements in sync with the main events in your project.

Linked events are displayed shorter and vertically aligned with the synchronized event. When you select an event that has linked events, the linked events are outlined in purple.



In this example, the events on track 2 are linked with the event on track 1.

When you move the event on track 1, the events on track 2 will stay in sync.

You can move the linked events on track 2 without affecting the location of the event on track 1.

Creating a sync link

1. Select the events you want to link.
2. Right-click the event that should be the synchronized event and choose CREATE SYNC LINK WITH SELECTED EVENTS from the shortcut menu.

Removing a sync link

1. Select the events in the sync link.

   > **TIP** To quickly select all events in a sync link, right-click one event in the sync link, choose SYNC LINK from the shortcut menu, and then choose SELECTALL from the submenu.

2. Right-click the event that should be the sync event and choose REMOVE SYNC LINK FROM SELECTED EVENTS from the shortcut menu.

Unlinking an event in a sync link

1. Select the event you want to unlink from a sync link.
2. Right-click the event, choose SYNC LINK from the shortcut menu, and then choose UNLINK from the submenu.

Selecting all events in a sync link

1. Select one event in the sync link.
2. Right-click the event, choose SYNC LINK from the shortcut menu, and then choose SELECT ALL from the submenu.

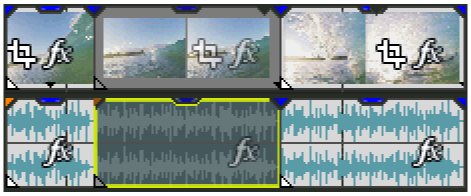
Applying switches to events

Event switches determine the behavior of events on the timeline.

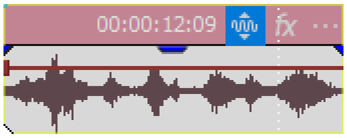
From the Edit menu, choose SWITCHES and choose a command from the submenu to toggle event switches on or off.

> **NOTE** You can also adjust event switches in the Event Properties dialog. ⓘ For more information, see Editing event properties

1. Select the event(s). For more information, see Creating selections and positioning the cursor
2. From the EDIT menu, choose SWITCHES (or right-click an event and choose SWITCHES from the shortcut menu).
3. Select the type of switch you want to apply to the event:

Switch	Description
Mute	Excludes the selected event from playback. Muted events are darkened on the timeline to indicate their muted state. In the following example, the middle events are muted: 
Lock	Locks an event so that it cannot be moved or edited. **TIP** Click the LOCK button 🔒 on the editing toolbar to quickly lock and unlock a selected event on the timeline.
Loop	Enabling the LOOP switch on an event will allow you to drag the right edge of the event out and have it repeat the file over and over rather than inserting silence.

Switch	Description
Trim Events to include all frames	This event switch enables you to automatically adjust the length of a timeline clip event so that it includes all of the frames of the media that the event holds. This comes in particularly handy when you’ve changed the playback rate of an event either through the Playback Rate event property or with a velocity envelope on the event. After activating this switch, add a velocity envelope and experiment with the speed settings. After you change the velocity, the event automatically trims so that it is long enough to show all frames of the media. Alternatively, you can set the switch in the event properties dialog box. Right-click an event and choose Properties from the menu. If you also decided to change the playback rate in the dialog box, the event's length automatically adjusts as necessary to contain all of the media’s frames. **NOTE** Selecting this switch makes it impossible to trim the length of an event by adjusting an event edge. If you need to trim the event, disable the switch.
Invert Phase (audio only)	Reverses the phase of the sound data. Although inverting data does not make an audible difference in a single file, it can prevent phase cancellation when mixing or crossfading audio signals.

Switch	Description
Normalize (audio only)	Maximizes an audio event’s volume without clipping. If you want to recalculate the normalization value for the selected event, click the RECALCULATE button on the Event Properties dialog to determine the normalization value for the selected event. If you trim or extend a normalized event, you will want to recalculate the normalization to account for the different audio levels that may have been exposed. Use the NORMALIZE button in the More menu of an event for easier access. The button also provides a visual cue that you can use to instantly determine whether or not the Normalize switch has been engaged on any event. 
Maintain Aspect Ratio (video only)	Prevents aspect ratio distortion (stretching of video frames) when the length-to-width ratio between the source media and project's frame size are not the same.

Switch	Description
Reduce Interlace Flicker (video only)	This switch can be useful in cases where the source material didn't originate as video and contains extremely high spatial or temporal frequencies. When you watch the rendered (interlaced) output on video of this sort of media, you may see flickering or crawling edges if this switch is not applied Enable this switch when using imported images that were not created using a video camera (such as photographs) or when using generated media or text. For more information, see Adding generated media to your project and Creating text and titles

Switch	Description
Resample Mode (video only)	VEGAS Pro resampling offers choices for how to treat footage whose framerate differs from the project framerate as well as how to handle resampling during slow-motion sequences that you create with the Velocity envelope or Playback Rate setting. With resampling, the intervening frames are interpolated from the source frames, much like a crossfade effect between the original frames. This may solve some interlacing problems and other jittery output problems.

Switch	Description	
	Use project settings	Uses the option that you chose previously in the File Properties dialog box **NOTE** Use project settings is the default for all video events, so if you use the default switch along with the default project setting discussed above, no resampling will occur.
	Frame blend	Analyzes the existing frames before and after the new one and blends them to create new frames as needed
	Optical Flow	Uses optical flow technology to create new frames as needed
	Disable resampling	Performs no resampling

Switch	Description
	NOTE The event resample setting will override the project RESAMPLE MODE setting. This way you can leave resampling set to disabled for the bulk of your project, but switch it to Optical flow for an individual slow-motion event in your timeline. For more information, see Setting project properties **TIP** If you have created slow motion with a Velocity envelope, you might want to choose Optical Flow from the list to see if it gives you smoother results. Optical Flow won’t work well in all cases, but can produce excellent results many times. If you aren’t happy with the results of Optical Flow, choose Frame Blend from the menu to see if you like those results any better. When you create slow motion though a change in the event’s playback rate, you can again experiment with the resampling mode that yields the best results. For instance, hold the Ctrl key and trim the right edge of your video event to the right. This lowers the event’s playback rate as indicated by the saw-toothed line running through the event.

Audio streams

When you add a multistream audio file to your project, you can choose which stream you want to use in the event.

1. Select an audio event and choose STREAM from the Edit menu (or right-click an event and choose STREAM from the shortcut menu). A submenu is displayed.
2. Choose a command from the submenu to choose the stream you want to use.

Audio channels

VEGAS Pro allows you to perform audio channel conversion nondestructively. You can mix channels, convert to mono, swap channels in a stereo file, or choose the channel that you want to use in a multichannel file.

1. Select an audio event and choose CHANNELS from the Edit menu (or right-click an event and choose CHANNELS from the shortcut menu). A submenu is displayed.
2. Choose a command from the submenu to specify how to treat the channels in your file.

   For events that use multichannel audio:

Item	Description
Channel x	Treats the event as a mono file using the audio from the channel you choose.
Channels x/y	Treats the event as a stereo file using the audio from the channels you choose.

   For events that use stereo audio:

Item	Description
Both	Treats the event as a normal stereo file.
Left Only	Creates a mono event using only the left channel of your media file.
Right Only	Creates a mono event using only the right channel of your media file.
Combine	Creates a mono event by mixing the channels of your media file. After mixing the channels, the amplitude is divided by two to prevent clipping.
Swap	Exchanges the right and left channels in a stereo file.

Opening events in an audio editor

The VEGAS Pro timeline is a nondestructive editing environment, which means that the original source files remain unchanged by any editing done in the software. Edits that modify the actual source media file (destructive edits) may be performed in a separate application such as Sound Forge software from MAGIX.

From the Tools menu, choose AUDIO, and choose OPEN IN [EDITOR NAME] from the submenu to start your sound-editing application and modify the selected audio event using the editor specified on the Audio tab in the Preferences dialog.

1. Select the event you want to edit.

   You can select multiple events to open each event in a separate window in the sound editor.

2. From the Tools menu, choose AUDIO, and choose OPEN IN [EDITOR NAME]. The editing application is opened with the event's media.

3. Edit and save the file.

   After you have edited and saved the file, VEGAS Pro automatically detects the updated file and updates the event in the project. However, if you change the media file’s name or location (by using Save As), you must import the edited (new) file into your project. For more information, see Adding media files to your project

NOTE

- Audio events from nested projects cannot be edited in a sound editor. For more information, see Nesting projects
- When you first install VEGAS Pro, it searches for Sound Forge software. If the software is detected, it is automatically assigned as your sound editor. However, if you do not have Sound Forge software, you may specify the location of your preferred audio editor on the Audio Tab in the Preferences dialog.

TIP You may also edit a file that has been placed in the Trimmer window by right-clicking the Trimmer window and choosing OPEN IN AUDIO EDITOR from the shortcut menu.

Opening a copy of an event in an audio editor

The VEGAS Pro timeline is a nondestructive editing environment, which means that the original source files remain unchanged by any editing done in the software. Edits that modify the actual source media file (destructive edits) may be performed in a separate application such as Sound Forge software from MAGIX.

From the Tools menu, choose AUDIO, and choose OPEN COPY IN [EDITOR NAME] from the submenu to start your sound-editing application and modify the a copy of the selected audio event using the editor specified on the Audio tab in the Preferences dialog. For more information, see Audio Tab

1. Select the event you want to edit.

   You can select multiple events to open each event in a separate window in the sound editor.
2. From the Tools menu, choose AUDIO, and choose OPEN COPY IN [EDITOR NAME]. The editing application is opened with a copy of the event's media.

3. Edit and save the file.

   After editing the sound file and saving, the new file is set as the active take for the event. The new file is added to the Project Media window with a take name appended to the original file name. ⓘ For more information, see Using takes as alternate versions of events

NOTE

- Audio events from nested projects cannot be edited in a sound editor.
- When you first install VEGAS Pro, it searches for MAGIX Sound Forge software. If the software is detected, it is automatically assigned as your sound editor. However, if you do not have Sound Forge software, you can specify the location of your preferred audio editor on the Audio tab in the Preferences dialog.

Editing event properties

Right-click an event and choose PROPERTIES from the shortcut menu to use the Event Properties dialog to modify an event.

Editing the name of the active take

If you have recorded multiple takes, you can edit the take names in the Event Properties dialog.

1. Right-click the event and choose PROPERTIES from the shortcut menu.
2. On the Audio Event tab, enter or edit the take name in the ACTIVE TAKE NAME box.
3. Click OK.

Changing event switches

1. Right-click the event and choose PROPERTIES from the shortcut menu.
2. On the Audio or Video Event tab, select the switches you want to use.

For more information, see Applying switches to events

3. Click OK.

Time-stretching or pitch-shifting an audio event

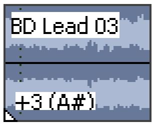
> **NOTE** The RESAMPLE AND STRETCH QUALITY setting on the Audio tab of the Project Properties dialog determines the quality of processing when time-stretching audio events. For more information, see Setting project properties

Editing from the timeline

1. Select an event.
2. Use the = and - keys on your keyboard (not the numeric keypad) to adjust pitch:

Key	Result
=	Raise pitch one semitone.
Ctrl+=	Raise pitch one cent.
Shift+=	Raise pitch one octave.
Ctrl+Shift+=	Reset pitch.
-	Lower pitch one semitone.
Ctrl+-	Lower pitch one cent.
Shift+-	Lower pitch one octave.
Ctrl+Shift+-	Reset pitch.

If ACTIVE TAKE INFORMATION is selected from the View menu, the event's pitch shift is displayed in the bottom-left corner of the event. If the media has a known root note, the new root is displayed in parentheses.



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Editing in the Event Properties dialog

1. Right-click the event and choose PROPERTIES from the shortcut menu.
2. On the Audio Event tab, choose a setting from the METHOD drop-down list.

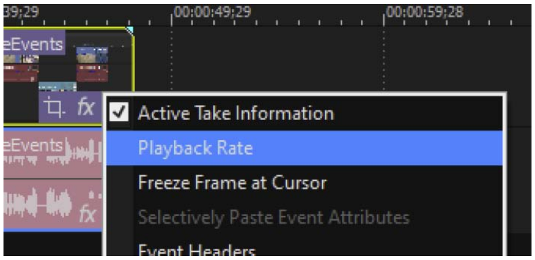
Setting	Description
None	Turns off time stretching and pitch shifting.

Setting	Description
élastique	The élastique method uses technology from zplane.development, and provides enhanced real-time time stretching and pitch-shifting capabilities. The élastique method also allows you to preserve and shift a clip's formants, which are the characteristic resonant frequencies of a sound. 1. Choose a setting from the STRETCH ATTRIBUTES drop-down list to choose the stretching method best suited to your media: ● PRO – Provides the highest quality stretching but requires more RAM usage and CPU power. ● EFFICIENT – Uses fewer resources while still producing great time-stretching quality for polyphonic audio. ● SOLOIST (MONOPHONIC) or SOLOIST (SPEECH) – Provide good quality for monophonic audio with little effect on system resources. 2. Type the desired event length in the NEW LENGTH box. The event's original length is displayed for reference in the ORIGINAL LENGTH box. 3. Type the desired pitch shift (in semitones) in the PITCH CHANGE box. If you want to change the event length without changing pitch, type 0 in the box. If you want the pitch to be determined by the new event tempo, select the LOCK TO STRETCH box. For example, doubling an event's tempo will raise its pitch by one octave. 4. If the élastique Pro mode is selected in the STRETCH ATTRIBUTES drop-down list, you can type a value in the

Setting	Description
	FORMANT SHIFT box to adjust the event's formants. This option is only available when the PRESERVE FORMANTS checkbox is selected. Formant shifting can be used to deepen the tone of a vocal performance without changing the pitch. The formant shift amount represents the number of semitones to Shift the timbre in addition to the offset required to compensate for any pitch shifting. For example, a setting of 0.000 applies formant correction with no additional shifting, while a setting of -7.000 will apply formant correction and deepen a sound by 7 semitones.
Classic	Allows you to time stretch the audio by specifying a new event length. You can specify a pitch shift amount or lock the pitch to the time stretching. 1. Type the desired event length in the NEW LENGTH box. 2. Type the desired pitch shift (in semitones) in the PITCH CHANGE box. If you want to change the event length without changing pitch, type 0 in the box. If you want the pitch to be determined by the amount of time stretching, select the LOCK TO STRETCH box. For example, doubling an event's length will raise its pitch by one octave. 3. Choose a setting from the STRETCH ATTRIBUTES drop-down list to specify how you want to divide and crossfade the file to prevent artifacts. Depending on your source material, you may need to experiment with different cross-fade types.

Changing the playback rate of or undersample a video event

1. Right-click the event and choose PROPERTIES from the shortcut menu.
2. On the Video Event tab, adjust the PLAYBACK RATE and UNDERSAMPLE RATE controls.

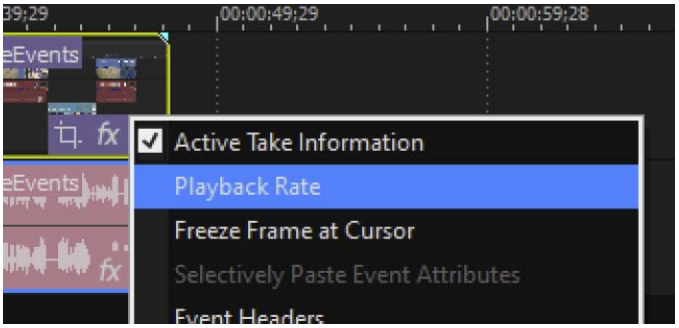
Setting	Description
Playback rate	Enter a value in the box to set the rate of playback. For example, a setting of 1 will play at normal speed, while 0.5 will play at half speed. Each video event in your project has a specific duration that is not changed by adjusting the playback rate. If you decrease the speed of a ten-second video event by 50%, only five seconds of video will be shown. On the other hand, if the speed is increased 200%, the ten seconds of video will play in only five seconds. The remaining five seconds of the event will be filled either with a freeze of the last frame or with ten additional seconds of video content from the media file (if the source media is longer than the event). Expanded lower limit for playback rate The lower limit for the event playback rate has been greatly expanded to enable super slow motion sequences.  39;29 00:00:49;29 00:00:59;28 eEvents eEvents ☑ Active Take Information Playback Rate Freeze Frame at Cursor Selectively Paste Event Attributes Event Headers Changing the playback rate 1. Click the MORE … button and choose PLAYBACK RATE from the menu. 2. In the PROPERTIES dialog box, enter the value you want into the Playback Rate field, or use the Playback Rate slider controls to set the value you want. 3. Set the rate to as low as 0.05.

Setting	Description
	4. When you've entered the rate you want, click OK.
Conform to Project Frame Rate	Click to adjust the playback rate of a high-frame-rate clip to play using the project frame rate. For more information, see [Working with high-frame-rate (HFR) clips]()
Undersample rate	Enter a value in the box to simulate a lower frame rate. For example, if you enter 0.5 in the box, the event will play at half its original frame rate, and each frame will be held twice as long as in the original media file, creating a strobe effect.

3. Click the OK button.

Expanded lower limit for playback rate

The lower limit for the event playback rate has been greatly expanded to enable super slow motion sequences.


39;29
00:00:49;29
00:00:59;28
eEvents
eEvents
☑ Active Take Information
Playback Rate
Freeze Frame at Cursor
Selectively Paste Event Attributes
Event Headers

Changing the playback rate

1. Click the MORE ⋯ button and choose PLAYBACK RATE from the menu.
2. In the PROPERTIES dialog box, enter the value you want into the Playback Rate field, or use the Playback Rate slider controls to set the value you want.

3. Set the rate to as low as 0.05.
4. When you’ve entered the rate you want, click OK.

Editing information about the media file

1. Right-click the event and choose PROPERTIES from the shortcut menu.
2. Click the MEDIA tab.
3. Edit the settings as needed.

   For more information, see Viewing or changing media file properties
4. Click the OK button.

Viewing media file properties

1. Right-click the event and choose PROPERTIES from the shortcut menu.
2. Click the GENERAL tab.

   The General tab displays information about the event's source media file, streams, metadata, and the plug-in used to read the file.
3. Click the OK button.

Copying and pasting or selectively pasting event attributes

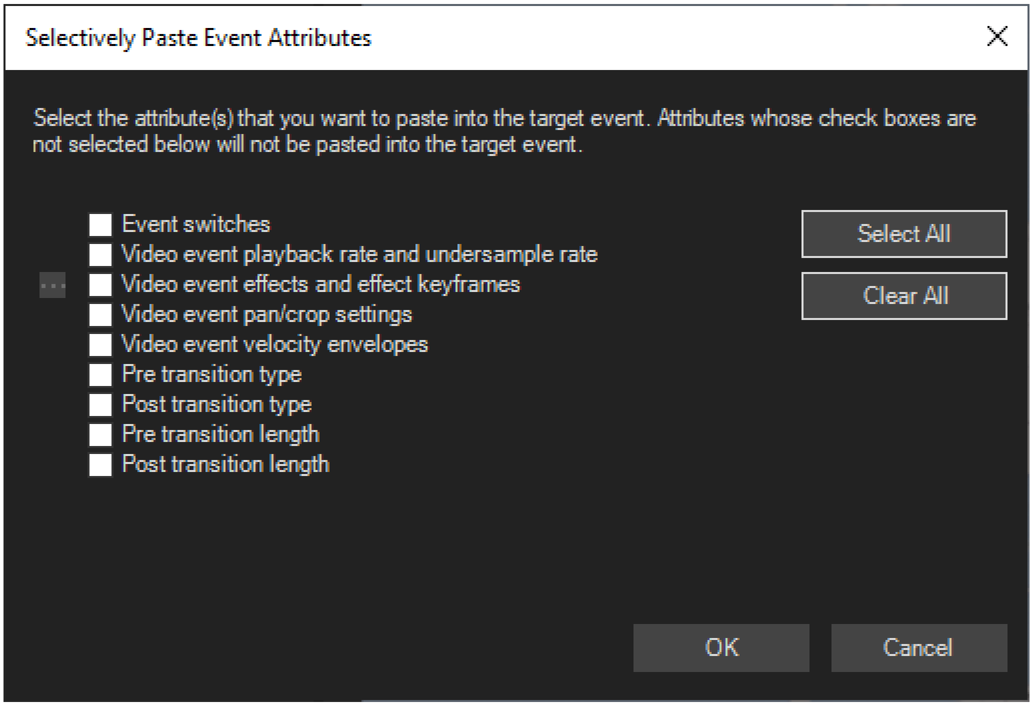
Copying and pasting event attributes allows you to apply properties from one event to other events. You can copy and paste all the attributes of one event into another or you can choose which attributes to paste. The following attributes can be copied and pasted:

- Event switches
- Audio event pitch shift
- Video event playback rate and undersample rate
- Video event effects and effect keyframes
- Video event pan/crop settings

- Video event velocity envelopes
- Pre and post transitions

Copy and paste event attributes

1. Select the event from which you want to copy attributes.
2. From the EDIT menu, choose COPY.
3. Select the event where you want to apply the copied attributes.
4. From the EDIT menu, choose
    - PASTE EVENT ATTRIBUTES or
    - SELECTIVELY PASTE EVENT ATTRIBUTES to select particular attributes to paste, rather than all of them.



Selectively Paste Event Attributes

Select the attribute(s) that you want to paste into the target event. Attributes whose check boxes are not selected below will not be pasted into the target event.

☐ Event switches
☐ Video event playback rate and undersample rate
☐ Video event effects and effect keyframes
☐ Video event pan/crop settings
☐ Video event velocity envelopes
☐ Pre transition type
☐ Post transition type
☐ Pre transition length
☐ Post transition length

    - Check the dialog of any attribute you want to paste and click OK.

> **NOTE** Copy, Paste and Selectively Paste Event Attributes commands are also available from the context menu and video event More button.

EXAMPLE

Pasting fade in/out attributes from one event to another

1. Add two video files to your timeline.
2. On the first video event, point to the top-left corner of the event.
3. When you see the pie-shaped Fade icon, drag the corner toward the middle of the event. This creates a fade in on the event.
4. In the same way, drag the top-right corner of the event toward the middle of the event to create a fade out.
5. Point to the edge of the fade in and when you see the Fade icon, right-click. From the context menu, select a different fade shape. Do the same for the fade out.
6. Right-click the event and choose COPY from the context menu.
7. Right-click the other event and choose SELECTIVELY PASTE ATTRIBUTES from the context menu.

   The bottom of the list includes four options:

   - **Pre transition type**: defines the curve type of the fade in
   - **Post transition type**: defines the curve type of the fade out
   - **Pre transition length**: defines the length of the fade in
   - **Post transition length**: defines the length of the fade out
8. Select the checkbox for the attributes you want to copy to the new event and click OK.

Using the Edit Details Window

Choose VIEW | WINDOW | EDIT DETAILS to toggle the display of the Edit Details window.

The Edit Details window displays a database for all of the media in your project. It shows information about how files in the project are being used and allows you to modify many of those properties. You may sort, add or change information, rearrange columns, and edit items in the project.

This window provides an alternate method for working with events, audio CD track lists, commands, markers, and regions.

Viewing Edit Details

1. Choose VIEW | WINDOW | EDIT DETAILS to display the Edit Details window.
2. From the SHOW drop-down list, choose the project information you want to see.

Item	Description
Audio CD Track List	Displays the information for each CD track and index marker that you've inserted in your project. Use this view for arranging a disc-at-once (Red Book) CD. For more information, see Disc-at-once (DAO or Red Book) CD Burning
Commands	Displays the settings for each metadata command that you've inserted in your project. For more information, see Inserting command markers
Events	Displays the information for each event on the timeline.
Markers	Displays the information for each marker that you've inserted in your project. For more information, see Inserting markers
Regions	Displays the information for each region that you've inserted in your project. For more information, see Inserting regions
Selected Events	Displays the information for each selected event on the timeline.

3. Use the column headings to arrange and sort the information in the window:

4. Drag the heading columns to rearrange the column order.
5. Click a column heading to sort in ascending or descending order.

   > **NOTE** The time-based columns (START, END, LENGTH, TAKE START, TIMECODE IN, and TIMECODE OUT) display time in your project's ruler format.
   >
   > You can set this format on the Ruler tab of the Project Propertiesdialog. For more information, see Setting project properties

6. Double-click a table cell to edit it, or right-click to display a shortcut menu.

Customizing the appearance of the window

1. Arrange and sort the information in the Edit Details window:
   - Drag the heading columns to rearrange the column order.
   - Click a column heading to sort in ascending or descending order.
   - Drag a heading off the Edit Details window to remove it from the view.
2. Enter a name in the PRESET box and click the SAVE button. The current view (including sort order) is saved.
3. To recall the view later, choose its name from the PRESET drop-down list.

Undoing and redoing edit operations

Undo and redo give you the freedom to experiment with your project. Edit to your heart's content. If you change your mind, you can always undo your changes. If you change your mind again, you can redo the undone edits (whew!).

For example, if you accidentally deleted a track, simply choose UNDO to restore the track.

> **TIP** You can perform an unlimited number of undos, so you can restore the project to any state since the last SAVE command.

Undoing the last action performed

From the Edit menu, choose UNDO or click the UNDO button ↶.

Undoing a series of actions

1. Click the arrow ▾ next to UNDO button ↶. A list of the most recent actions that you can undo is displayed.
2. Select the action you want to undo. If the action does not appear in the list, use the scroll bar to scroll through the list. The selected action and all actions above it are reversed.

Reversing the last Undo performed

From the Edit menu, choose REDO, or click the REDO button ↷.

> **NOTE** If you later decide that you did not want to reverse an undo, click the UNDO button ↶.

Reversing a series of Undo actions

> **IMPORTANT** When you reverse an Undo, you also reverse all Undo actions above it in the list.

1. Click the arrow ▾ next to REDO button ↷. A list of the most recent actions that you can redo is displayed.
2. Select the action you want to redo. If the action does not appear in the list, use the scroll bar to scroll through the list. The selected action and all actions above it are redone.

Undoing all edits

From the Edit menu, choose UNDO ALL to reverse all edits in the undo history.

You can view the edit history by clicking the arrow ▾ next to UNDO button ↶.

Clearing the edit history

From the Edit menu, choose CLEAR EDIT HISTORY to clear all of the entries in the Undo/Redo History list for the current project.

The edit history is also cleared when you close your project.

> **IMPORTANT** You will not be able undo or redo any previous changes after clearing the history.

Rebuild audio peaks

From the View menu, choose REBUILD AUDIO PEAKS to rebuild peak files (.sfk) for all audio events in your project.

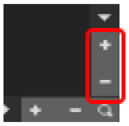
Zooming and magnification

Use the controls in the lower-right corner of the timeline to change the magnification level of your project.

> **TIP**
> Tips:
>
> - Double-clicking the ZOOM TOOL button 🔍 in the corner of the timeline adjusts the horizontal and vertical magnification so that as much of the project is displayed as possible.
> - Roll the mouse wheel forward or back to zoom out or in quickly.

Zoom in to track height

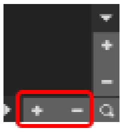
- Click the ZOOM IN TRACK HEIGHT button + to increase the track height zoom level to show more event detail.
- Click the ZOOM OUT TRACK HEIGHT button − to decrease the track height zoom level to show more tracks.
- Click and drag the area between the buttons to increase or decrease track height zoom level.



TIP Press Ctrl+Shift+Up/Down Arrow to increase or decrease the height of all tracks.

Zoom in to an event

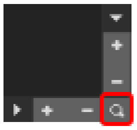
- Click the ZOOM IN TIME button + to increase the horizontal zoom level to show more event detail.
- Click the ZOOM OUT TIME button − to decrease the horizontal zoom level to show more of the timeline.
- Click and drag the area between the buttons to zoom in or out on the timeline.



> **TIP**
> You can also use the Up/Down Arrow keys to zoom:
>
> - Press the Up/Down Arrow keys to zoom in horizontally in small increments.
> - Press Ctrl+Up/Down Arrow to zoom in large increments. If a time selection exists, Ctrl+Up/Down Arrow will zoom to the selection.

Zoom in to a selection

Click the ZOOM TOOL button in the corner of the timeline to temporarily change the cursor into the Zoom tool. Select an area of the timeline that you want to magnify, and the cursor will revert to the previously active tool.



> **TIP** Press Ctrl+Up/Down Arrow to zoom to the selection.

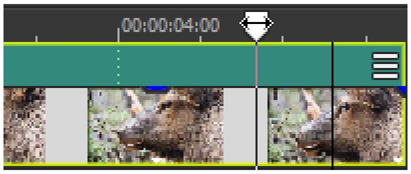
Scrubbing

You can use scrubbing to scroll playback of your project at varying speeds.

Choose a setting from the JKL / SHUTTLE SPEED drop-down list on the Editing tab of the Preferences dialog to control the scrub speed and range when you scrub with the JKL keys or with a multimedia controller. For more information, see [Using a multimedia controller]

Scrubbing with the playhead

Drag the playhead above the timeline to shuttle forward or backward from the cursor position to find an edit point.

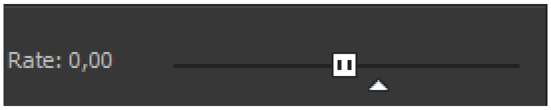


TIP

- Hold Alt, click the ruler, and drag to move the cursor to the position you clicked and scrub in the direction you drag.
- Hold Ctrl while dragging (or drag while holding the right mouse button) to find audio when you're zoomed out. The cursor moves in larger steps than with a regular drag.
- Hold Ctrl+Alt while dragging to scrub video only.
- Zoom in or out to adjust the scrub sensitivity. ℹ For more information, see [Zooming and magnification]()

Using the scrub control in the track list

Drag the scrub control to shuttle forward or backward from the cursor position to find an edit point.



You can drag the NORMAL RATE indicator below the scrub control (or double-click the label to type a playback rate) to adjust playback speed when you click the PLAY ▶ or PLAY FROM START ⏵ button.

Scrubbing with the cursor

1. Hover over the cursor in an area of the timeline that does not contain an event and press Ctrl. The mouse pointer is displayed as a ↔.

> **NOTE** When the ALLOW CTRL+DRAG CURSOR STYLE SCRUB OVER EVENTS checkbox on the General tab of the Preferences dialog is selected, you can scrub with the mouse even when the cursor is over an event.

2. Drag left or right to scrub playback.

Scrubbing with the keyboard

Press the J, K, or L keys to use the keyboard as a scrub control.

> **TIP** Press and hold K while pressing J or L to emulate a shuttle knob mode. Press K+J to turn the knob to the left or K+L to turn the knob to the right.

Item	Description
J	Scrub reverse mode. Press again to accelerate the playback rate.
K	Pause.
L	Scrub forward mode. Press again to accelerate the playback rate.

Track editing

Tracks are containers along the VEGAS® Pro timeline where you arrange audio and video events.

Events sit on tracks to determine when an event starts and stops, and multiple tracks are mixed together to produce your final output.

Selecting tracks

Selecting tracks, along with selecting events, is the first step in a variety of editing tasks. There are different methods for selecting tracks depending on the type of selections you want to make.

> **TIP** When multiple tracks are selected, you can perform editing tasks on all selected tracks simultaneously. For example, if you want to adjust the volume of several audio tracks while preserving their relative levels, select the tracks and drag the VOLUME fader on any of the selected tracks. All the faders will move together.

Selecting a single track

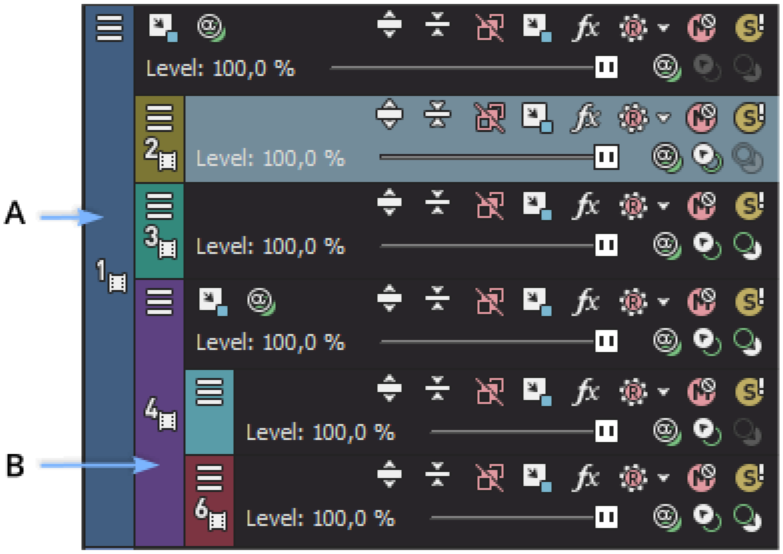
Click anywhere in the track header of the track you want to select. The track is highlighted.

Selecting multiple adjacent tracks

Hold down the `Shift` key and click in the track headers of the first and last track you want to select. The tracks — including those between the selected tracks — are highlighted.

Selecting groups of composited tracks

Click the vertical bar below a parent track to select a group of composited tracks. For example, clicking the area marked A in the following track list to select tracks 1 through 6. Clicking the area marked B selects tracks 4 through 6.



For more information, see Compositing and masks

Selecting multiple nonadjacent tracks

Use the following procedure to select multiple tracks that are not located next to each other.

1. Hold down the Ctrlkey and click in the track header of each track that you want to select. The tracks are highlighted.

   > **NOTE** If you have selected a track that you do not want to select, simply click onthe track again.

2. When you have selected all of the tracks, release the Ctrl key.

Selecting all tracks

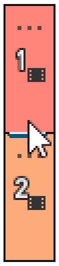
From the Edit menu, choose SELECT, and then choose SELECT ALL from the submenu to select all tracks and events in your project.

Arranging tracks

Tracks can be moved to create logical groupings at any time during a project's creation.

Move a track

» Drag its icon to a new location in the track list. The new location is indicated by the highlighted line separating the tracks.



Move multiple tracks

» Use the Shift or Ctrl keys while clicking on the track icons, and then drag the tracks to a new location.

Grouping tracks

You can use track groups to organize similar tracks and hide them from view when you're not working on them. This can make the track list less cluttered and easier to work with, especially in large projects.

You can reorder track groups in the track list the same way you reorder tracks. Simply drag a track group header to a new position in the track list.

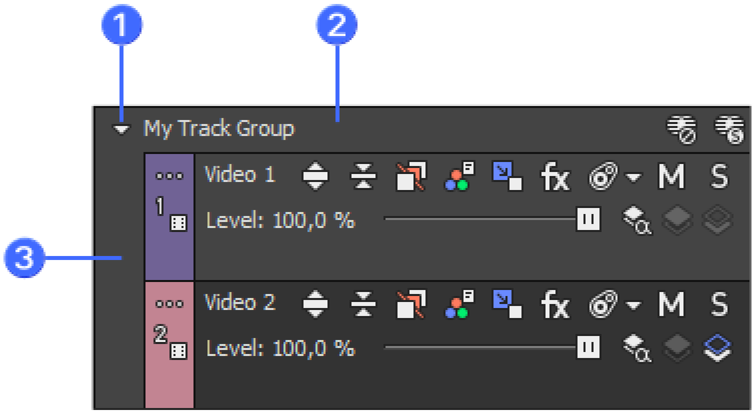


FIGURE *Track Group*

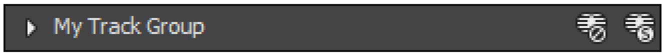
1	Collapse/Expand Track Group Button
2	Track Group Header
3	Grouping Lane

Creating a track group

1. Select two or more tracks to group together. Press Shift to select multiple adjacent tracks. Nonadjacent tracks cannot be grouped together.
2. Right-click one of the tracks, choose TRACK GROUP, and then choose GROUP SELECTED TRACKS.

   The tracks are grouped together. Click the COLLAPSE/EXPAND TRACK GROUP button in the track group header to close and expand the tracks in the group.

   When a track group is collapsed, dark gray bars indicate the length and location of events in the collapsed tracks.



NOTE If you select a parent or child video track to be added to a track group, all associated parent/child tracks will also be added to the group to preserve the compositing relationship. For more information, see [Compositing and masks]

IMPORTANT When you collapse a track group, tracks and events in the group are not locked. Edits made elsewhere in the project may affect tracks and events in the collapsed group.

Adding tracks to existing track groups

Drag one or more tracks into a track group to add the selected tracks to the group.

Removing tracks from groups

Drag one or more tracks out of a track group to remove the selected tracks from the group. You can also right-click one or more selected tracks in a group, choose TRACK GROUP, and then choose UNGROUP SELECTED TRACKS to remove tracks from a group.

Clearing track groups

1. Click the track group header to select all tracks in the group.
2. Right-click the track group header and choose UNGROUP SELECTED TRACKS to ungroup all tracks in the group.

   > **TIP** You can also right-click the track grouping lane and choose UNGROUP SELECTED TRACKSfrom the shortcut menu to clear the track group.

Selecting all tracks in a group

Click a track group header or grouping lane to select all tracks in the group.

Renaming track groups

Every track group in your project has a scribble strip where you can type a name for the track group.

1. Double click the scribble strip. Any existing name is highlighted on the strip.
2. Type the new track group name.
3. Press Enter to save the track group's name.

Muting and soloing track groups

Click the SOLO TRACK GROUP button in a track group header to isolate all tracks in the group for playback. Soloing a track group overrides muted tracks in the group.

Click the SOLO TRACK GROUP button again to restore the track group for playback.

Click the MUTE TRACK GROUP button in a track group header to temporarily suspend playback of all tracks in the group. Muting a track group overrides soloed tracks in the group.

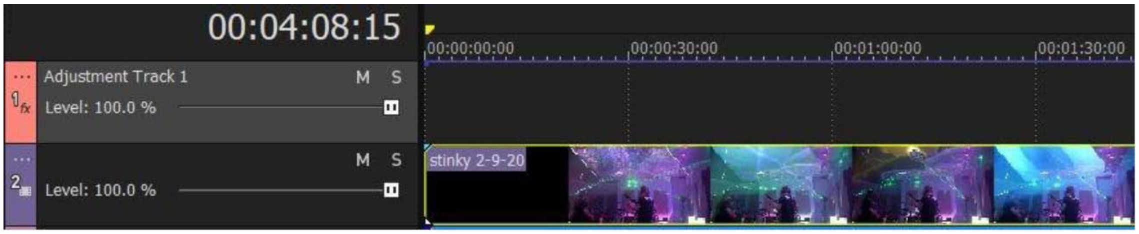
Click the MUTE TRACK GROUP button again to restore the track group for playback.

Adjustment Tracks

Adjustment tracks provide a way to apply video effects to multiple tracks simultaneously.

Add an adjustment track

» From the main menu, choose INSERT | ADJUSTMENT TRACK. Any effects you now apply to this track will also affect all tracks below it in your project track list.



How this adjustment track works in your project:

1. Add several video clips to your project, all on different tracks beneath your adjustment track.
2. Add a video file to at least one track above your adjustment track. Stagger all of the video events so that they do not overlap.
3. Click the TRACK FX button in the adjustment track's track header.
4. From the Plug-In Chooser, add an easily noticeable video effect such as a Lens Flare.
5. Click in your timeline so that your project cursor sits within one of the events in a track below the adjustment track.
6. In the VIDEO TRACK FX window, make adjustments to the Lens Flare so that you can see it clearly.

Notice that the effect that you applied at the track level of the adjustment track affects the video in the event on the track below it.

7. Click through your timeline to test all of the other events in your project.

   Notice that the Lens Flare shows on every event that sits on a track below the adjustment track, but not on the event that sits on a track above the adjustment track.

8. With your cursor sitting within one of the events below the adjustment track, lower the adjustment track's Level slider.

   Notice that this controls the strength of the effect on all of the tracks influenced by the adjustment track. Set the Level slider back to 100.0%.

9. Next, notice that the adjustment track has a blue line running through the top of it. This is the track's Composite envelope. You can use this envelope to change the adjustment track's composite level over time.

   - Double-click the envelope to add a point and then change the value of that point.
   - Add more points throughout your project to see how you can raise and lower the strength of the effect over time.

   This gives you great flexibility to include an event on a track that would normally be influenced by the adjustment track but set it so the event is not influenced.

> **TIP**
>
> Button display independence for Adjustment Tracks
>
> You can configure your visible button set for Adjustment tracks independently of regular video tracks. Adjustment tracks show the Track FX button in the track header by default. You can click this button to access the Plug-In Chooser and add the video effects you want to pass through to other tracks. You can also drag video effects directly from the Video FX window onto the Adjustment track header area to add them.

Using the compositing parent/child relationship

You can also use the compositing parent/child relationship between tracks to control which tracks become influenced by the adjustment track.

1. Click the MORE ⋯ button for the track directly below the adjustment track.
2. From the menu, select MAKE COMPOSITING CHILD.
3. Make the next track down a compositing child of the adjustment track as well.
4. Now, click around your project.

   Notice that the tracks that you've marked as child tracks of the adjustment track remain under the influence of the adjustment track. But any tracks that are not children of the adjustment tracks--even though they are below the adjustment track--are no longer influenced by it. This gives you great flexibility to choose just the tracks you want associated with the adjustment track.

Multiple effects

You can add as many adjustment tracks to your project as you need. So, say track 1 is an adjustment track. It will influence tracks 2 through 5 (assume no parent/child relationships exist). Now, say track 3 is also an adjustment track. That track will influence tracks 4 and 5, but not track 2 which is above it in the track order. In this case, tracks 4 and 5 are influenced by two different adjustment tracks.

Sometimes you might want to change the video effect on the tracks affected by your adjustment tracks over time. For instance, say you have a three-minute video. During each individual minute you want a different video effect to influence all the tracks below the adjustment track. You have a couple of different approaches to accomplish this.

First, you could add a new adjustment track for each individual minute (in our example above). So, add three adjustment tracks and add one of the three different effects to each of the tracks. Now use your Composite envelopes on these adjustment tracks to "cut" the effect in and out at the appropriate time on each adjustment track. So, at any one time, the effect of only one track passes through to the tracks you want to influence.

To keep your project organized if you use several adjustment tracks in this manner, select each of the adjustment tracks. Right-click one of the selected tracks and choose Track Group | Group Selected Tracks from the context menu. Now click the Collapse Track Group button so that you have just one small track group visible and you can reclaim the timeline space taken by the adjustment tracks.

You can also accomplish the task with just one Adjustment track. To use this method, add the three video effects to the Adjustment track's Video FX chain. Now find a parameter in each of the video FX that controls the strength of the effect. Click the Animate button for that parameter. Now use the animation timeline and keyframes to turn that effect off when you don't need it and on when you do. Do this for each of the effects. In this way you can add multiple effects to one adjustment track and control when the effect actually influences the tracks below and when it does not.

You can get quite sophisticated with your tracks and effects by combining all of these features in this way.

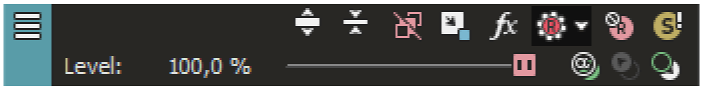
VIDEO *Adjustment Tracks*

Duplicating tracks

If you want to create an exact copy of a track — including events, effects, and envelopes — right-click the track number and choose DUPLICATE TRACK from the shortcut menu.

Video track controls

The controls in the track list allow you to adjust track motion, effects, opacity, and compositing.



> **NOTE** If you cannot find a trace control mentioned here, it's probably hidden. Click the More button … to specify which track control should be visible in the track header.

Changing a track's color

You can change the color of your tracks to create logical track groups.

To change a track's color, right-click the header and choose TRACK DISPLAY COLOR from the shortcut menu. Choose a color from the submenu to change the icon in the Track List and the color that is used to highlight a selected event in the timeline.

Use the Display tab in the Preferences dialog to edit the available colors. For more information, see Display Tab

Changing a track's height

Drag a track's bottom border to set its height. If you want to set a track's height as the default height for new tracks, you can right-click within the track list and choose SET DEFAULT TRACK PROPERTIES from the shortcut menu. For more information, see Setting default track properties

Click MINIMIZE to minimize a track vertically.

Click MAXIMIZE to zoom in vertically so a track fills the timeline.

After minimizing or maximizing a track, click the MINIMIZE or MAXIMIZE button again to return a track to its previous height.

Track height keyboard shortcuts

- Press Ctrl + Shift + ↑ (Up Arrow) or ↓ (Down Arrow) to change the height of all tracks at once.
- Press ` to minimize all tracks. Press again to restore tracks to their previous height. When restoring track height, tracks that you previously minimized are not restored—you can restore these tracks by clicking the RESTORE TRACK HEIGHT button on the track header.
- Press Ctrl + ` to return all tracks to the default height.

Expanding or collapsing track layers

Right-click the track header and choose EXPAND TRACK LAYERS to expand a video track to reveal three subtracks within the main track: the A roll, B roll, and transition roll. In this view, sequential clips alternate between the A and B rolls, and the overlapping area between events is represented by the transition roll.

Choose the command again to collapse the track layers.

For more information, see Transitions

Expanding or collapsing track keyframes

If you're using video track effects or track motion, keyframes will be displayed in the timeline below your video track. You can drag keyframes to adjust their position, or right-click a keyframe to display a shortcut menu that allows you to add and delete keyframes and change the interpolation curve between keyframes.

For more information, see Adding video effects and Editing track motion

> **TIP** Select the LOCK ENVELOPES TO EVENTS button to lock track-level keyframes to the events on the track. When keyframes are locked, you can move events along the timeline, and their associated keyframes move with them.

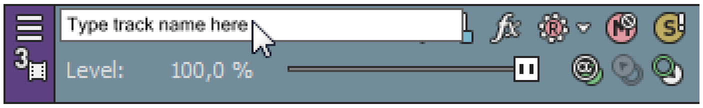
Click the EXPAND/COLLAPSE TRACK KEYFRAMES button in the track header to toggle the height of the track keyframes.

> **NOTE** Event-level keyframes are not visible in the timeline.

Assigning a name to a track

1. Double-click in the Scribble Strip and type the track name.

   If you do not see the Scribble Strip, expand the track to reveal it. The Scribble Strip appears above the LEVEL fader.

   Level: 100,0 %

2. Press Enter to save the name.

Bypassing the motion blur envelope

If you've applied a motion blur envelope to the video bus track, the envelope affects all tracks. To bypass motion blur for a track, select the BYPASS MOTION BLUR button in the track header.

For more information, see Video bus track

Applying track motion

Click the TRACK MOTION button to display the Track Motion window.

You can use this window to animate a video track or create picture-in-picture effects.

For more information, see Editing track motion

Applying effects to a track

Click the TRACK FX button to add or edit track-level video effects. Track effects are applied to every event on the selected track.

For more information, see Adding video effects

Muting a track

Click the MUTE button to prevent a track from being played in the mix. Click the MUTE button on additional tracks to add them to the mute group. To unmute a track, click the MUTE button again.

> **TIP** When you have a group of tracks muted, hold Ctrl while clicking the MUTE button on an unmuted track to remove all other tracks from the mute group. Hold Ctrl while clicking the MUTE button on a muted track to reset all MUTEbuttons.

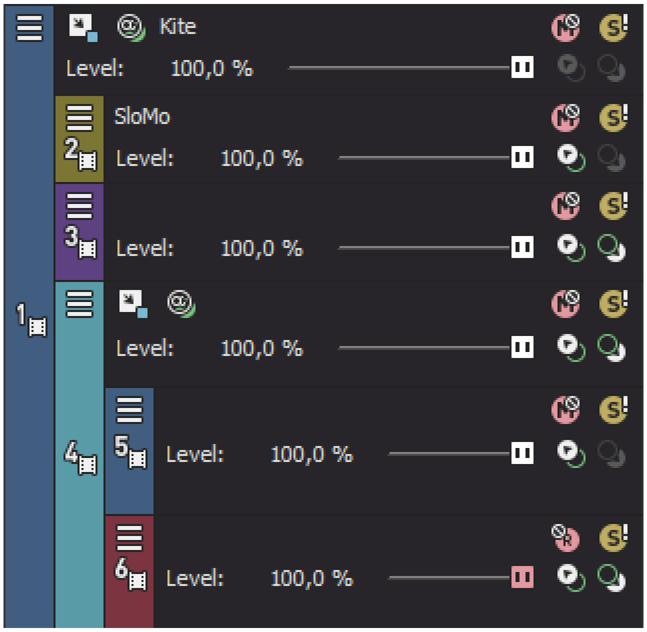
Muting or unmuting a track

1. Deselect the AUTOMATION SETTINGS button .
2. Click the MUTE button .

When you have multiple levels of parent and child tracks, clicking the MUTE button on a parent track mutes the parent track and its compositing children.

In the sample track list, muting track 1 will mute tracks 1 through 6.

Muting track 4 will mute tracks 4 through 6.


Kite
Level: 100,0 %
SloMo
2
Level: 100,0 %
3
Level: 100,0 %
1
Level: 100,0 %
4
5
Level: 100,0 %
6
Level: 100,0 %

For more information, see Compositing and masks

Adjusting mute automation

You can edit mute automation settings by adding a mute envelope to the track or by using the controls in the track header.

1. Select the AUTOMATION SETTINGS button . The MUTE button is displayed as .
2. Click the MUTE button to change the track's mute automation state.

   The button behaves differently if the track has a mute envelope and when you change the track automation recording mode:

   - When the track automation mode is set to OFF, the button mutes the entire track.
   - When the track has a mute envelope and the track automation mode is set to READ, the button changes state to reflect the envelope setting during playback but cannot be adjusted.
   - When the track has a mute envelope and the track automation mode is set to TOUCH or LATCH, the button edits the envelope setting at the cursor position.

For more information, see Recording track envelope and keyframe automation andVideo track automation

Soloing a track

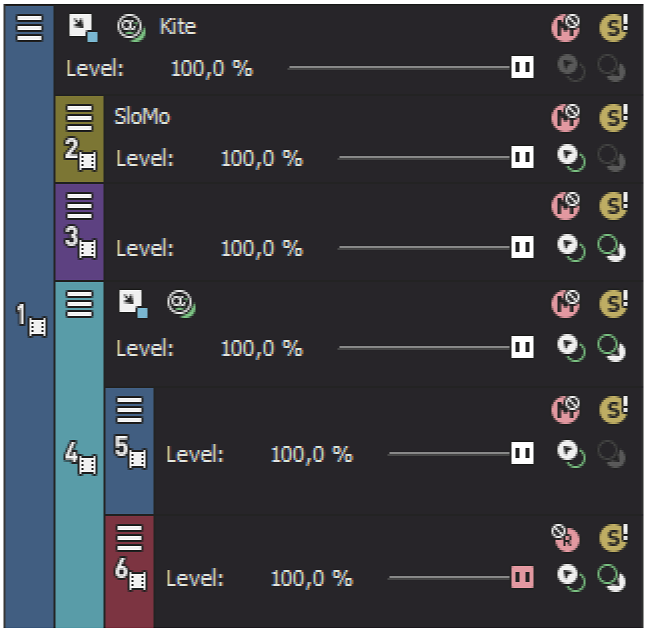
Select the SOLO button to mute all unselected tracks. Click the SOLO button on additional tracks to add them to the solo group. To remove a track from the solo group, click the SOLO button again.

> **TIP** When you have a group of tracks soloed, hold Ctrl while clicking the SOLO button on an unsoloed track to remove all other tracks from the solo group. Hold Ctrl while clicking the SOLO button on a soloed track reset all SOLO buttons.

When you have multiple levels of parentand child tracks, clicking the SOLO button ona parent track solos the parent track and its compositing children. Othernonsoloed tracks at the same compositing level are bypassed.

In the sample track list, soloing track 1 will solo tracks 1 through6.

Soloing track 4 will solo tracks 4 through 6. Tracks 2 and 3 are bypassed,and tracks 1 and 7 play normally.



For more information, see Compositing and masks

Adjusting track opacity and trim levels

The LEVEL slider in the track header affects the composite level of a track. The slider can function as a trim control that adjusts the overall track opacity, or it can adjust track opacity automation settings.

The trim level is added to the track automation settings so your envelope is preserved, but with a boost or cut applied. For example, setting the trim control to 90% has the same effect as decreasing every envelope point by 10%.

Click the PARENT COMPOSITE MODE or COMPOSITING MODE button and choose a mode from the menu to determine how the transparency in a video track is generated. Since lower tracks show through higher tracks, it is the compositing mode of the higher track that determines how much of the lower track shows though. The compositing mode of the lowest video track adjusts its transparency against the background.

For more information, see Video track automation and Compositing and masks

Adjusting the compositing trim level

1. Deselect the AUTOMATION SETTINGS button.
2. Drag the LEVEL slider to control the transparency or blending of each track: left is 100% transparent, and right is 100% opaque.

   You can hold Ctrl while dragging the slider to adjust the setting in finer increments, or double-click the slider to return it to 100% opaque.

   If multiple tracks are selected, all selected tracks are adjusted.

Adjusting the composite automation level

You can edit automation settings by adding a composite level envelope to the track or by using the controls in the track header.

1. Select the AUTOMATION SETTINGS button. The slider thumb is displayed as a

   in automation mode.
2. Drag the LEVEL slider.

   The slider behaves differently if the track has a composite level envelope and when you change the track automation recording mode:

   - When the track automation mode is set to OFF, the slider adjusts the composite level of the entire track.
   - When the track has a composite level envelope and the track automation mode is set to READ, the slider will follow the envelope during playback but cannot be adjusted.
   - When the track automation mode is set to TOUCH or LATCH, the slider edits the envelope setting at the cursor position. If the track does not have a composite level envelope, an envelope will be added when you adjust the slider.

If multiple tracks are selected, all selected tracks are adjusted.

For more information, see Recording track envelope and keyframe automationVideo track automation

Adjusting track fade-to-color levels

You can edit automation settings by adding a fade-to-color envelope to the track or by using the controls in the track header. The Fade slider is displayed only when the AUTOMATION SETTINGS button is selected.

> **TIP** You can set the track fade colors for each video track independently by right-clicking the track header, choosing FADE COLORS, and then choosing TOP or BOTTOM from the submenu. If you want to change the default fade colors, use the TRACK FADE TOP and TRACK FADE BOTTOM controls on the Video tab of the Preferences dialog.

1. Select the AUTOMATION SETTINGS button . The slider thumb is displayed as a in automation mode.
2. Drag the FADE slider.

   The slider behaves differently when you change the track automation recording mode:

   - When the track automation mode is set to OFF, the slider adjusts the fade level of the entire track.
   - When the track automation mode is set to READ, the slider will follow the envelope during playback but cannot be adjusted.
   - When the track automation mode is set to TOUCH or LATCH, the slider edits the envelope setting at the cursor position.

If multiple tracks are selected, all selected tracks are adjusted.

For more information, see Recording track envelope and keyframe automationVideo track automation

Audio bus tracks

From the View menu, choose AUDIO BUS TRACKS to toggle the display of audio bus tracks at the bottom of the timeline. An audio bus track exists for each bus or assignable effects chain in your project and serves as a timeline representation of each bus or assignable effects chain.

You can use bus tracks to automate volume, panning, and effect parameters using envelopes. For more information, see Audio track automation

The controls in the bus track are duplicated on bus or assignable effects channel strips in the Mixing Console window. Bus Channel Strips and "FX Send (Assignable Effects) Channel Strips."

Adding automation to an audio bus track

Adding volume, panning, and effect automation to a bus track is just like adding automation to a standard track.

For more information about track automation, see Audio track automation

Adding effects to a bus track

Click the BUS FX button in the bus track header to add or edit bus effects. If there are no effects on the bus, clicking this button displays the Plug-In Chooser. If an audio bus already has effects assigned, clicking this button displays the Bus FX window. For more information, see Editing audio effects

> **NOTE** If the bus effects chain includes plug-ins with automatable parameters, the BUS FX button is displayed as a .

Muting a track

Click the MUTE button to prevent a bus track from being played in the mix. Click the MUTE button on additional tracks to add them to the mute group. To unmute a track, click the MUTE button again.

Muting or unmuting a bus track

1. Deselect the AUTOMATION SETTINGS button .
2. Click the MUTE button .

> **TIP** When you have a group of tracks muted, hold `Ctrl` while clicking the MUTE button on an unmuted track to remove all other tracks from the mute group. Hold `Ctrl` while clicking the MUTE button on a muted track to reset all MUTEbuttons.

Adjusting mute automation

You can edit mute automation settings by adding a mute envelope to the track or by using the controls in the track header.

1. Select the AUTOMATION SETTINGS button . The MUTE button is displayed as .
2. Click the MUTE button to change the bus track's mute automation state.

   The button behaves differently if the track has a mute envelope and when you change the track automation recording mode:

   - When the track automation mode is set to OFF, the button mutes the entire track.
   - When the track has a mute envelope and the track automation mode is set to READ, the button changes state to reflect the envelope setting during playback but cannot be adjusted.
   - When the track has a mute envelope and the track automation mode is set to TOUCH or LATCH, the button edits the envelope setting at the cursor position.

Soloing a track

Click the SOLO button to solo all selected audio bus tracks. Click the SOLO button on additional tracks to add them to the solo group. To remove a track from the solo group, click its SOLO button again.

> **TIP** Hold `Ctrl` while clicking a SOLO button to solo a single track and remove all other tracks from the solo group.

Resizing bus tracks

You can drag the horizontal splitter between the track list and bus tracks to increase or decrease the space used to display bus tracks. Perform any of the following actions to resize individual bus tracks:

- Drag a bus track's bottom border to set its height.
- Click MINIMIZE to minimize a track vertically.
- Click MAXIMIZE to zoom in vertically so a bus track fills the lower portion of the timeline.
- After minimizing or maximizing a bus track, click the MINIMIZE or MAXIMIZE button again to return a bus track to its previous height.
- Press Ctrl+Shift+Up/Down Arrow when the bus track area has focus to resize all bus tracks at once.

Video bus track

From the View menu, choose VIDEO BUS TRACK to toggle the display of the video bus track at the bottom of the timeline. A single bus track exists as a timeline representation of the main video output.

You can use the bus track to animate video output effects using keyframes, add motion blur envelopes, or video supersampling envelopes.

Adding keyframes to the video bus track

Adding keyframes to the video bus track is just like working with any other video track. Use video bus track keyframes to animate video output effects. For more information, see Keyframe animation and Adding video effects

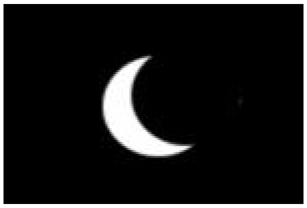
Adding a fade-to color envelope

You can add fade-to-color, motion blur amount, and video supersampling envelopes to the video bus track to affect your video output.

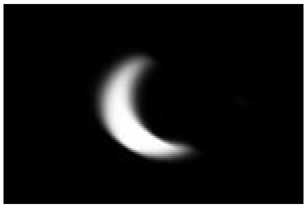
Adding and editing a fade-to-color envelope is just like adding an envelope on a standard video track, but it affects all tracks. For more information, see Video track automation

Adding a motion blur envelope

Motion blur can help you make computer-generated animation look more realistic. For example, if you use track motion or event pan/crop to move a clip across the frame, each frame is displayed clearly when no motion blur is applied. Turning on motion blur adds a motion-dependent blur to each frame to create the appearance of smooth motion in the same way a fast-moving subject is blurred when you take a photograph with a slow shutter speed.



Panned event frame without motion blur



Frame with motion blur

1. Right-click the video bus track, choose INSERT/REMOVE ENVELOPE from the shortcut menu, and then choose MOTION BLUR AMOUNT from the submenu.
2. Edit motion blur automation settings:
   - Add and adjust envelope points as necessary to set the time interval that will be used for blurring. For more information, see Adjusting envelopes Increasing the value emphasizes the blur effect. For example, setting the envelope to 0 means no blurring will occur; setting the envelope to 1 second means that each frame will be blurred for one-half second before and after the frame.

     —or—
   - Select the AUTOMATION SETTINGS button Ⓡ. The MOTION BLUR slider handle is displayed as a ⏸.

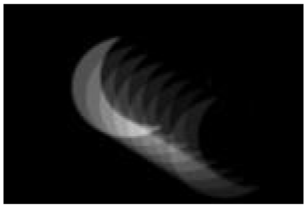
     The MOTION BLUR slider behaves differently if the track has a composite level envelope and when you change the track automation recording mode:
     - When the track automation mode is set to OFF, the slider adjusts the motion blur level of the entire track.
     - When the track has a motion blur envelope and the track automation mode is set to READ, the slider will follow the envelope during playback but cannot be adjusted.
     - When the track automation mode is set to TOUCH or LATCH, the slider edits the envelope setting at the cursor position. If the track does not have a motion blur envelope, an envelope will be added when you adjust the slider.
3. The motion blur envelope affects all tracks. To bypass motion blur for a track, select the BYPASS MOTION BLUR button ⧄ in the track header.
4. To change blur type, choose a setting from the MOTION BLUR TYPE drop-down list on the Video tab in the Project Properties dialog. This setting determines the shape of the blur and the opacity of the frames. For more information, see Setting project properties

IMPORTANT Adding a motion blur envelope significantly increases your rendering time.

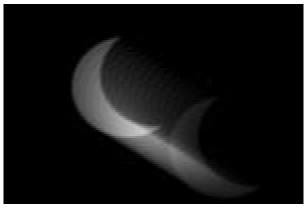
Adding a video supersampling envelope

Video supersampling can improve the appearance of computer-generated animation by calculating intermediate frames between the project's frame rate, allowing you to create smoother motion blurring or motion from sources such as track motion, event pan/crop, transitions, or keyframable effects.

NOTE The effect of video supersampling is less apparent with video that contains fast motion, and supersampling cannot improve the appearance of existing video.



Motion blur without supersampling—multiple exposures are visible



Motion blur with supersampling—multiple exposures appear smoother

1. Right-click the video bus track, choose INSERT/REMOVE ENVELOPE from the shortcut menu, and then choose VIDEO SUPERSAMPLING from the submenu.
2. Edit automation settings:
   - Add and adjust envelope points as necessary to indicate how many frames will be calculated between frames (using the project's frame rate) to create the blur.

     —or—

- Select the AUTOMATION SETTINGS button. The SUPERSAMPLING slider handle is displayed as a.

  The SUPERSAMPLING slider behaves differently if the track has a supersampling envelope and when you change the track automation recording mode:

  - When the track automation mode is set to OFF, the slider adjusts the supersampling level of the entire track.
  - When the track has a supersampling envelope and the track automation mode is set to READ, the slider will follow the envelope during playback but cannot be adjusted.
  - When the track automation mode is set to TOUCH or LATCH, the slider edits the envelope setting at the cursor position. If the track does not have a supersampling envelope, an envelope will be added when you adjust the slider.

> **IMPORTANT** Video supersampling significantly increases your rendering time. For example, when you set the video supersampling envelope to 2, twice as many frames are rendered than would be rendered without supersampling. Adjust the envelope to apply supersampling only where necessary.

Adding effects to a bus track

Click the VIDEO OUTPUT FX button in the bus track header to add or edit video output effects. If there are no video output effects, clicking this button displays the Plug-In Chooser. If you've already set up video output effects, clicking the button displays the Video Output FX window. For more information, see Adding video effects

Muting the video output

Click the MUTE button to mute the video output. To unmute the video output, click the MUTE button again.

Muting or unmuting a bus track

1. Deselect the AUTOMATION SETTINGS button .
2. Click the MUTE button .

Adjusting mute automation

You can edit mute automation settings by adding a mute envelope to the track or by using the controls in the track header.

1. Select the AUTOMATION SETTINGS button . The MUTE button is displayed as .
2. Click the MUTE button to change the bus track's mute automation state.

   The button behaves differently if the track has a mute envelope and when you change the track automation recording mode:

   - When the track automation mode is set to OFF, the button mutes the entire track.
   - When the track has a mute envelope and the track automation mode is set to READ, the button changes state to reflect the envelope setting during playback but cannot be adjusted.
   - When the track has a mute envelope and the track automation mode is set to TOUCH or LATCH, the button edits the envelope setting at the cursor position.

Bypassing video effects and envelopes

Click the BYPASS FX AND ENVELOPES button in the bus track header to bypass all video output effects and bus track envelopes.

Resizing bus tracks

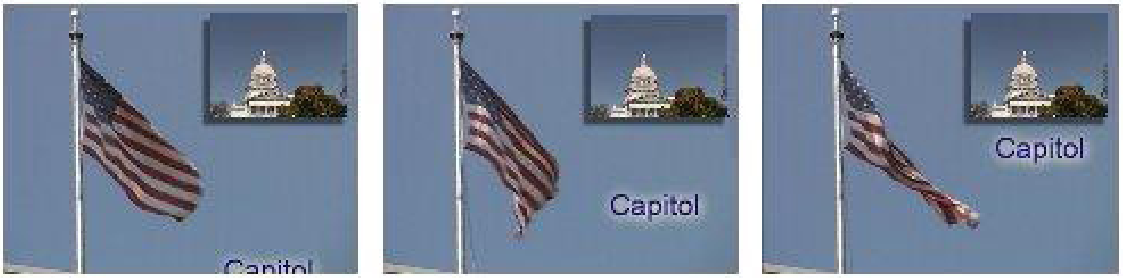
You can drag the horizontal splitter between the track list and bus tracks to increase or decrease the space allocated to bus tracks. Perform any of the following actions to resize individual bus tracks:

- Drag a bus track's bottom border to set its height.
- Click MINIMIZE to minimize a track vertically.
- Click MAXIMIZE to zoom in vertically so a bus track fills the lower portion of the timeline.
- After minimizing or maximizing a bus track, click the MINIMIZE or MAXIMIZE button again to return a bus track to its previous height.
- Press Ctrl+Shift+Up/Down Arrow when the bus track area has focus to resize all bus tracks at once.

Editing track motion

From the Tools menu, choose VIDEO, and choose TRACK MOTION from the submenu (or click the TRACK MOTION button on a track header) to display the Track Motion window.

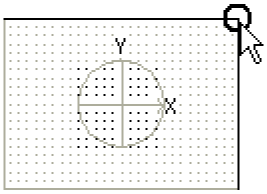
The Track Motion window is used to move a video track over another track. In the following example, a picture-in-picture window has been created by resizing and positioning the overlay video clip. Motion was used to gradually move the text up from the bottom of the window.



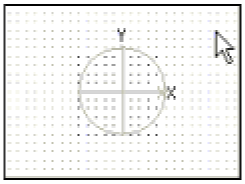
Zooming or panning a video track

When you use a single setting for the track, you move all video on the track. When you add keyframes to change track motion settings through the duration of the track, you can create animation. For more information, see Keyframe animation

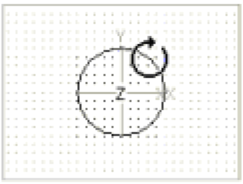
1. Click the TRACK MOTION button on the track that contains the overlay you want to animate. The Track Motion window is displayed.
2. Choose a setting from the COMPOSITE MODE drop-down list to specify how your track will be composited over other tracks. For more information, see Compositing and masks
3. Adjust the selection area to change the viewable area of the track and its position. You can use the POSITION, ORIENTATION, and ROTATION controls on the left side of the window, or you can drag the selection box in the workspace. When you drag, guides are displayed in bold to indicate how the track will be moved or rotated:



Moving closer to or farther from viewer. Drag across corners to flip the track.



Dragging the track to change its position.



Rotating around the Z axis

4. Use the buttons at the top of the dialog to allow or prevent movement or scaling. See the Change editing options heading in this topic for more information.

   > **TIP** Right-click the workspace to display a shortcut menu that displays commands to restore, center, or flip the selection box. You can also force the box to match the source media's aspect ratio, your project's output aspect ratio, or a square aspect. Matching the output aspect ratio can prevent black bars from appearing when you use source media (such as photographs) that does not match your project's aspect ratio.

   The track motion occurs instantly, and the results are updated in the Video Preview window.

5. Use the keyframe controller at the bottom of the Track Motion window to establish distinct track motion settings throughout the duration of the track.

   During playback, intermediate frames are interpolated to create smooth motion.

   Expand the KEYFRAME INTERPOLATION heading on the left side of the window and drag the SMOOTHNESS slider to adjust the interpolation.

> **TIP** Use the DEFAULT TRACK MOTION SMOOTHNESS control on the External Control & Automation tab of the Preferences dialog to set the default Smoothness value for new keyframes.

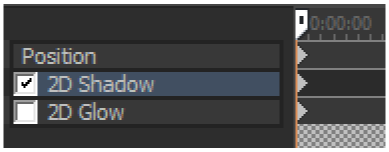
Creating a shadow effect

The shadow effect creates a drop shadow under an object, window, or title. A shadow is especially effective under a picture-in-picture window.

This procedure assumes that you have already created an event on the track above the background video to be used as an overlay.

1. Click the TRACK MOTION button on the track where you want to add a shadow effect. The Track Motion window is displayed.
2. Select the 2D SHADOW row in the keyframe controller. When the 2D SHADOW row is selected, shadow controls are displayed in the Track Motion dialog.

   Select the 2D SHADOW checkbox to apply the shadow so you can see the results of your shadow in the Video Preview window, or clear the checkbox to bypass the shadow.

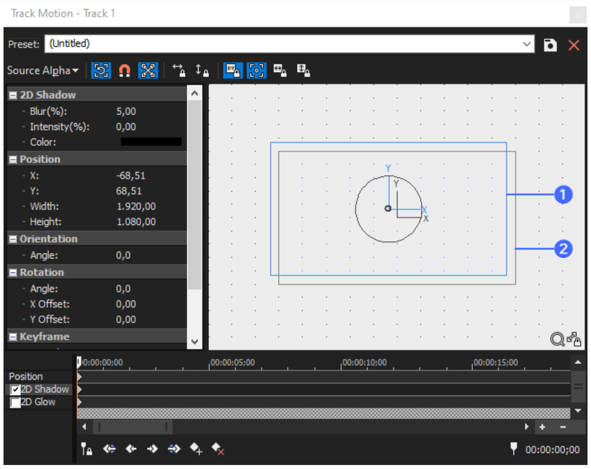
   

   Position
   ☑ 2D Shadow
   ☐ 2D Glow

3. Use the 2D Shadow controls on the left side of the window to set the color and appearance of the shadow:

Item	Description
Blur %	Type a number in the box or click the ▾ button to display a slider you can use to soften the edge of the shadow. Set to 0 for a hard edge, or increase the setting to feather the edge of the shadow.
Intensity	Type a number in the box or click the ▾ button to display a slider you can use to establish the transparency of the shadow's blurred edge. Decrease the setting for a translucent shadow, or increase the setting for a more opaque shadow.
Color	Click the down arrow next to the color swatch to display a color picker. Use the sliders or edit boxes in the color picker to set the shadow color, or use the eyedropper tool to sample a color from your screen.

4. Adjust the size position of the shadow by dragging the box in the workspace or using the POSITION, ORIENTATION, and ROTATION controls on the left side of the window. For more information about manipulating the selection box, see Crop, zoom, or pan a video track in this section.



Preset: (Untitled)

2D Shadow
Blur(%): 5,00
Intensity(%): 0,00
Color: ■

Position
X: -68,51
Y: 68,51
Width: 1.920,00
Height: 1.080,00

Orientation
Angle: 0,0

Rotation
Angle: 0,0
X Offset: 0,00
Y Offset: 0,00

Keyframe

1	Cropped video
2	Shadow

5. To animate the shadow, click in the 2D SHADOW row of the Keyframe Controller to set the cursor to a later time and adjust the shadow settings.

   You can use keyframe animation to change the color or transparency of the shadow, or you can move the shadow independently of the overlay video.

   For more information, see Keyframe animation

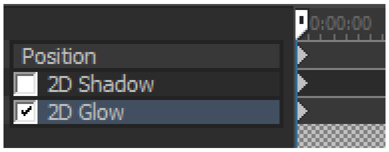
Creating a glow effect

A glow is similar to a shadow, but is typically a bright color with feathered edges.

This procedure assumes that you have already created an event on the track above the background video to be used as an overlay.

1. Click the TRACK MOTION button on the track where you want to add a shadow effect. The Track Motion window is displayed.
2. Select the 2D GLOW row in the keyframe controller. When the 2D GLOW row is selected, glow controls are displayed in the Track Motion dialog.

   Select the 2D GLOW checkbox to apply the shadow so you can see the results of the glow effect in the Video Preview window, or clear the checkbox to bypass the glow.

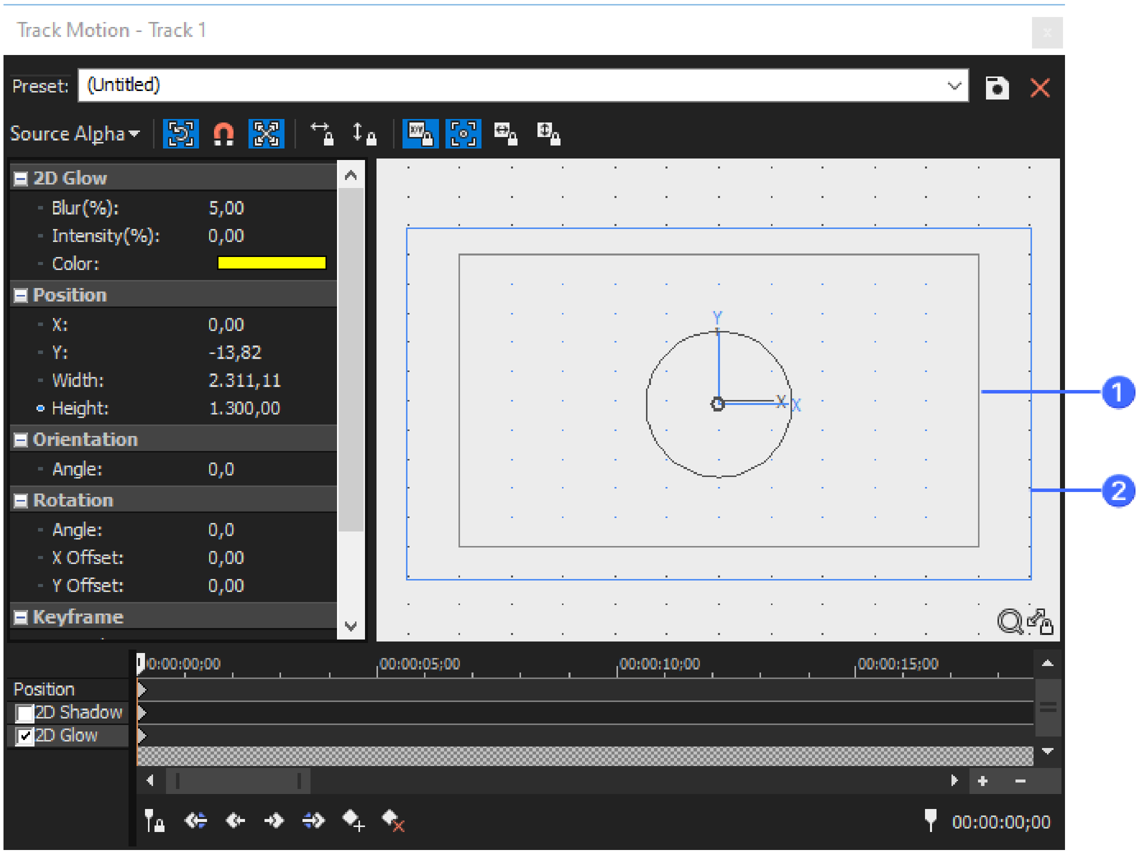
   

   Position
   ☐ 2D Shadow
   ☑ 2D Glow

3. Use the 2D Glow controls on the left side of the window to set the color and appearance of the glow:

Item	Description
Blur %	Type a number in the box or click the ▾ button to display a slider you can use to soften the edge of the glow effect. Set to 0 for a hard edge, or increase the setting to feather the edge of the glow.
Intensity	Type a number in the box or click the ▾ button to display a slider you can use to establish the transparency of the glow's blurred edge. Decrease the setting for a translucent glow, or increase the setting for a more opaque glow.
Color	Click the down arrow next to the color swatch to display a color picker. Use the sliders or edit boxes in the color picker to set the glow color, or use the eyedropper tool to sample a color from your screen.

4. Adjust the size position of the glow by dragging the box in the workspace or using the Position, Orientation, and Rotation controls on the left side of the window. For more information about manipulating the selection box, see Crop, zoom, or pan a video track in this section.



2D Glow
- Blur(%): 5,00
- Intensity(%): 0,00
- Color:

Position
- X: 0,00
- Y: -13,82
- Width: 2.311,11
- Height: 1.300,00

Orientation
- Angle: 0,0

Rotation
- Angle: 0,0
- X Offset: 0,00
- Y Offset: 0,00

Keyframe

Position
☐ 2D Shadow
☑ 2D Glow

00:00:00;00

1	Cropped video
2	Glow

5. To animate the glow, click in the 2D GLOW row of the Keyframe Controller to set the cursor to a later time and adjust the glow settings.

   You can use keyframe animation to change the color or transparency of the glow, or you can move the glow independently of the overlay video.

   For more information, see [Keyframe animation]

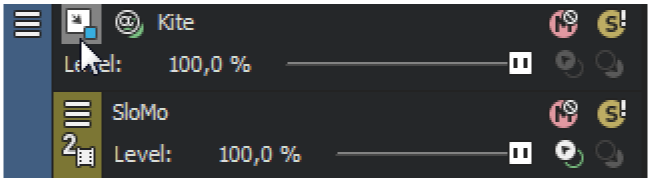
Moving a group of composited tracks (applying parent motion)

1. Click the MAKE COMPOSITING CHILD button on the tracks you want to group to create a compositing group.

   If you want to move the compositing group in the 3D space, click the PARENT COMPOSITE MODE button on the parent track and choose 3D SOURCE ALPHA.

   For more information, see Compositing and masks and 3D compositing

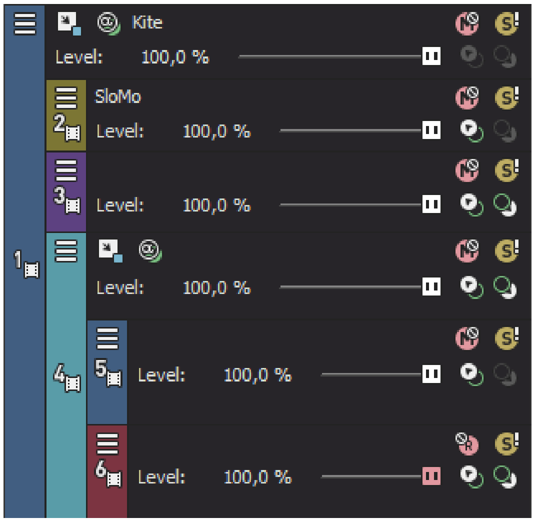
2. Click the PARENT MOTION button on the parent track. The Track Motion window is displayed.


Kite
Level: 100,0 %
SloMo
2
Level: 100,0 %

Parent track motion is applied to the parent track and all child tracks.

In the sample track list, parent track motion on track 1 will affect tracks 1 through 6.

Parent track motion applied to track 4 will affect only tracks 4 through 6.


Kite
Level: 100,0 %
SloMo
2
Level: 100,0 %
3
Level: 100,0 %
1
Level: 100,0 %
4
5
Level: 100,0 %
6
Level: 100,0 %

---

3. Choose a setting from the COMPOSITE MODE drop-down list to specify how your tracks will be composited over other tracks.

4. Perform the procedures described earlier in this topic to crop or zoom the composited tracks, change their position on screen, or add shadow or glow effects.
5. If you want to create animated track motion, use the keyframe controller at the bottom of the Track Motion window to establish distinct zoom settings throughout the duration of the track.

   During playback, intermediate frames are interpolated to create smooth motion.

   For more information, see [Keyframe animation]()

Changing editing options

Use the toolbar at the top of the Track Motion window to change your editing options:

Item	Description
ENABLE ROTATION	Select this button if you want to be able to rotate, or spin, the video. When the button is not selected, video is locked so you can move it horizontally or vertically, but the track cannot be rotated.
Enable Snapping to Grid	Select this button if you want your editing to snap to the grid.
Edit in Object Space	Select this button if you want to edit in the object's space rather than the camera's space. For example, if a video object is rotated, its X axis may not correspond to the X axis of the of the Video Preview window. Selecting the EDIT IN OBJECT SPACE button in conjunction with the PREVENT MOVEMENT buttons allows you to move the object along its own X and Y axes.
Prevent Movement (X)	Select this button if you want to prevent horizontal movement of the track.
Prevent Movement (Y)	Select this button if you want to prevent vertical movement of the track.
Lock Aspect Ratio	Select this button if you want the selection box to retain its aspect ratio during resizing. When the button is not selected, the height and width can be resized independently.
Scale About Center	Select this button if you want the selection box to retain its center point when you resize the box by dragging its edges. When the button is not selected, the opposite side of the selection box will remain anchored when you drag the edges to resize it.

Item	Description
Prevent Scaling (X)	Select this button if you want to lock the horizontal dimension of the selection box.
Prevent Scaling (Y)	Select this button if you want to lock the vertical dimension of the selection box.

Saving or recalling a keyframe preset

Keyframe presets save the settings of the selected keyframe row at the cursor position.

> **NOTE**
>
> - Presets for the Position, 2D Shadow, and 2D Glow keyframe rows are saved separately.
> - Presets for 2D and 3D track motion are saved separately: presets you create in this window will not be available in the 3D Track Motion window. For more information, see 3D compositing

Saving a preset

1. Adjust your Position, 2D Shadow, or 2D Glow settings as desired to create a keyframe.
2. Type a name in the PRESET box.
3. Click the SAVE PRESET button .

Recalling a preset

1. Click in the Position, 2D Shadow, and 2D Glow keyframe row to select a row and position the cursor where you want to apply the preset.
2. Choose a setting from the PRESET drop-down list.

   If no keyframe exists at the cursor position, one is created using the settings from the preset. If a keyframe exists at the cursor position, the keyframe's settings are replaced with the settings from the preset.

Deleting a preset

Click the DELETE PRESET button ✕ to delete the current preset.

Setting default track properties

You can use any track's settings to specify default settings for new tracks.

Editing default track settings

1. Right-click a track header and choose SET DEFAULT TRACK PROPERTIES from the shortcut menu.
2. Select the checkbox for each item that you want to use as a default when creating a new track:

Item	Description
Volume	Select this checkbox if you want to use the current setting of the VOLUME fader whenever you insert an audio track.
Composite Mode	Select this checkbox if you want to use the current setting of the COMPOSITING MODE button whenever you insert a video track.
Pan Type	Select this checkbox if you want to use the current panning mode whenever you insert an audio track. To set the panning mode, right-click the PAN slider and choose a mode from the drop-down list. For more information, see Audio panning modes
Height	Select this checkbox if you want to use the current track height whenever you insert an audio or video track.
Track FX	Select this checkbox if you want to use the current track effect chain and settings whenever you insert an audio or video track. For more information, see Adding audio effects and Adding video effects
Input monitor	Select this checkbox if you want to enable record input monitoring when you insert an audio track. For more information, see Recording audio

Item	Description
Automation mode	Select this checkbox if you want to use the AUTOMATION SETTINGS setting and track automation mode setting from the selected track whenever you insert an audio or video track. For more information, see Recording track envelope and key-frame automation

3. Click OK.

Restoring the original track settings

1. Right-click a track header and choose SET DEFAULT TRACK PROPERTIES from the shortcut menu.
2. Select the RESTORE ORIGINAL DEFAULTS check box.
3. Click OK.

Render to New Track

From the Tools menu, choose RENDER TO NEW TRACK to mix multiple tracks to a single track. This function is similar to track bouncing in the analog world.

> **TIP** When your project contains many tracks and effects, mixing down can help conserve processing power.

When you render multiple tracks, any envelope or track effects that you have applied will be rendered into the new track. The original source files remain unaffected, and the new track(s) will be saved to a new file.

1. Click the SOLO button for the tracks that you want to mix down. If no tracks are soloed, the rendered track will match the Master Bus output. Create a time selection if you want to mix down a portion of your project.

   Video tracks will be rendered into a single video track, and audio tracks will be rendered to a single stereo audio track.
2. From the Tools menu, choose RENDER TO NEW TRACK. The Render to New Track dialog is displayed.
3. Use the controls in the Render to New Track dialog to choose the location and format you want to use to save your rendered track.

   For more information, see Rendering your project
4. Click the RENDER button. A dialog is displayed to show rendering progress.
5. When the mixing is complete, the new track appears in the track list.
6. After the new track appears, you can delete the original tracks.

Multicamera editing

VEGAS® Pro makes it easy to work with video from multiple cameras right from the timeline. You can capture and edit video for a single scene from multiple cameras or for a single scene shot multiple times from one camera. Multicamera work is generally completed in five steps.

Shooting multicamera video

When shooting multicamera video, there are a few key components to consider before getting started:

- If possible, use the same make and model of camera and the same settings. Otherwise, you may need to do significant color correction in order to match the look between cameras.
- If possible, provide a single timecode source to all cameras.

With synchronized timecode, VEGAS Pro can lay out multicamera media in perfect synchronization. Otherwise, you'll need to manually adjust the alignment between clips. For more information, see Synchronizing video in multicamera projects

Unsynchronized timecode between two cameras—even of the same type—drifts as much as one second per hour. Likewise, date/time stamps also drift and can only be used for approximate layout. If you only need two cameras on your shoot, be aware that some Sony cameras (e.g. HVR-V1) can synchronize timecode (using a feature called “TC Link”) over IEEE-1394.

- Set the date and time in each camera. The closer these are, the better the approximate layout will be. Even if you’re using a master timecode source, you should set the date/time as a backup.
- Before or after each scene, record a synchronization point. It is preferable to use a video slate board for this purpose, but you can also employ a loud and visible hand clap. You can also use a flash from a still camera, but you must disable any red-eye reduction, as this can cause multiple flashes. A fast camera flash combined with a fast shutter speed can be problematic as well.

  Regardless of the synchronization method you choose, it must be visible by all cameras.
- If you forget to record a synchronization point, you'll have to align the clips using another reference point, such as something consistent in the audio or video. Be aware that in distant shots, the audio captured by the camera’s microphone will be delayed from the video (1 frame for every 11.5 meters).
- At least one of the cameras should be recording the audio you’ll use for the final edit. Alternatively, if you’re using dual-system sound, you can record audio on another device altogether. If you are shooting a musical performance, you might even be using the studio-recorded audio track. If you record audio on multiple cameras, you'll be able to switch between it along with the video if you choose.

Capturing multicamera video

You can use the VEGAS Video Capture application included with VEGAS Pro to capture recordings from each camera in your multicamera shoot just as you would normally.

However, when you capture multicamera video, it is especially important to give each tape (or disc) a unique name; VEGAS Pro uses this information to create a track for each camera. Before you begin the capture process, enable scene detection in the capture application so each segment is captured as a separate clip.

Synchronizing video in multicamera projects

In order to effectively edit multicamera footage within VEGAS Pro, you must have your video clips synchronized. The best place to do this is the timeline, using the same VEGAS Pro editing tools as you would for any video project.

Laying out clips using timecode or data/time stamps

1. Start a new project or open an existing project to which you want to add the multicamera video.
2. From the Options menu, choose QUANTIZE TO FRAMES if it is not already selected. For more information, see Quantize to frames
3. From the Options menu, choose IGNORE EVENT GROUPING to turn it off.
4. Select your clips in the Project Media window.
5. Add your clips to the timeline:
    - For clips with synchronized timecode, choose MULTICAMERA from the Tools menu, and then choose LAY OUT TRACKS USING MEDIA TIMECODE from the submenu.
    - For clips without synchronized timecode, choose MULTICAMERA from the Tools menu, and then choose LAY OUT TRACKS USING MEDIA DATE/TIME STAMP from the submenu.

The result is a pair of tracks for each camera, with events aligned based on the timecode or date/time stamp of each clip. If your scenes were captured with synchronized timecode, your clips should be in perfect alignment. Otherwise, you'll need to adjust the alignment to synchronize the clips. The goal is to align the clips in time so the synchronization points you recorded occur at the same timeline position for all clips.

Adjusting alignment using audio

If you can assume that all cameras involved have recorded the same audio, you can also use these audio tracks to synchronize the events.

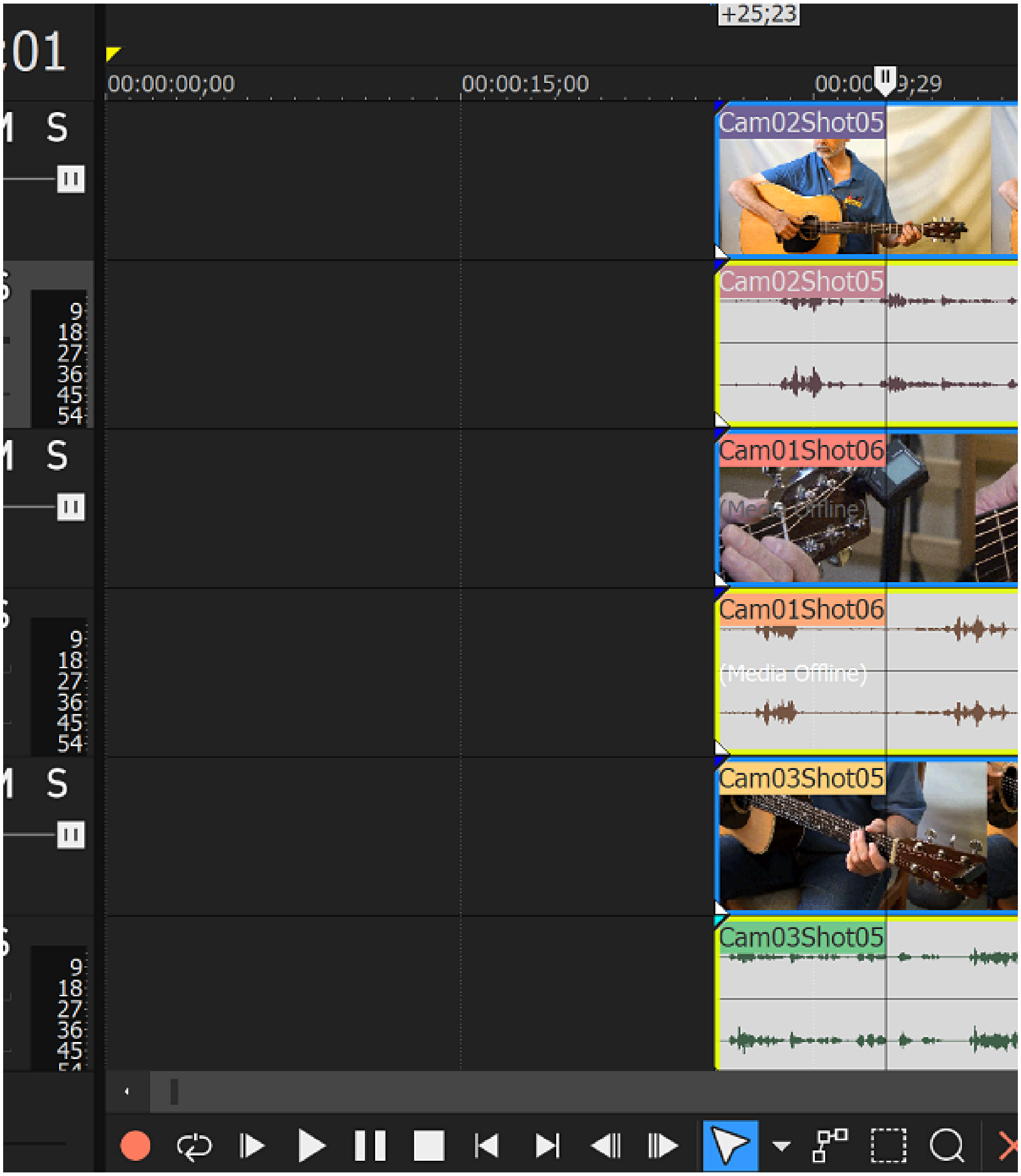
1. Select all events.
2. Choose Menu TOOLS | MULTICAMERA | SYNCHRONIZE AUDIO TO ALIGN EVENTS
3. The events below the topmost one are moved forward or backward so that they are synchronized.

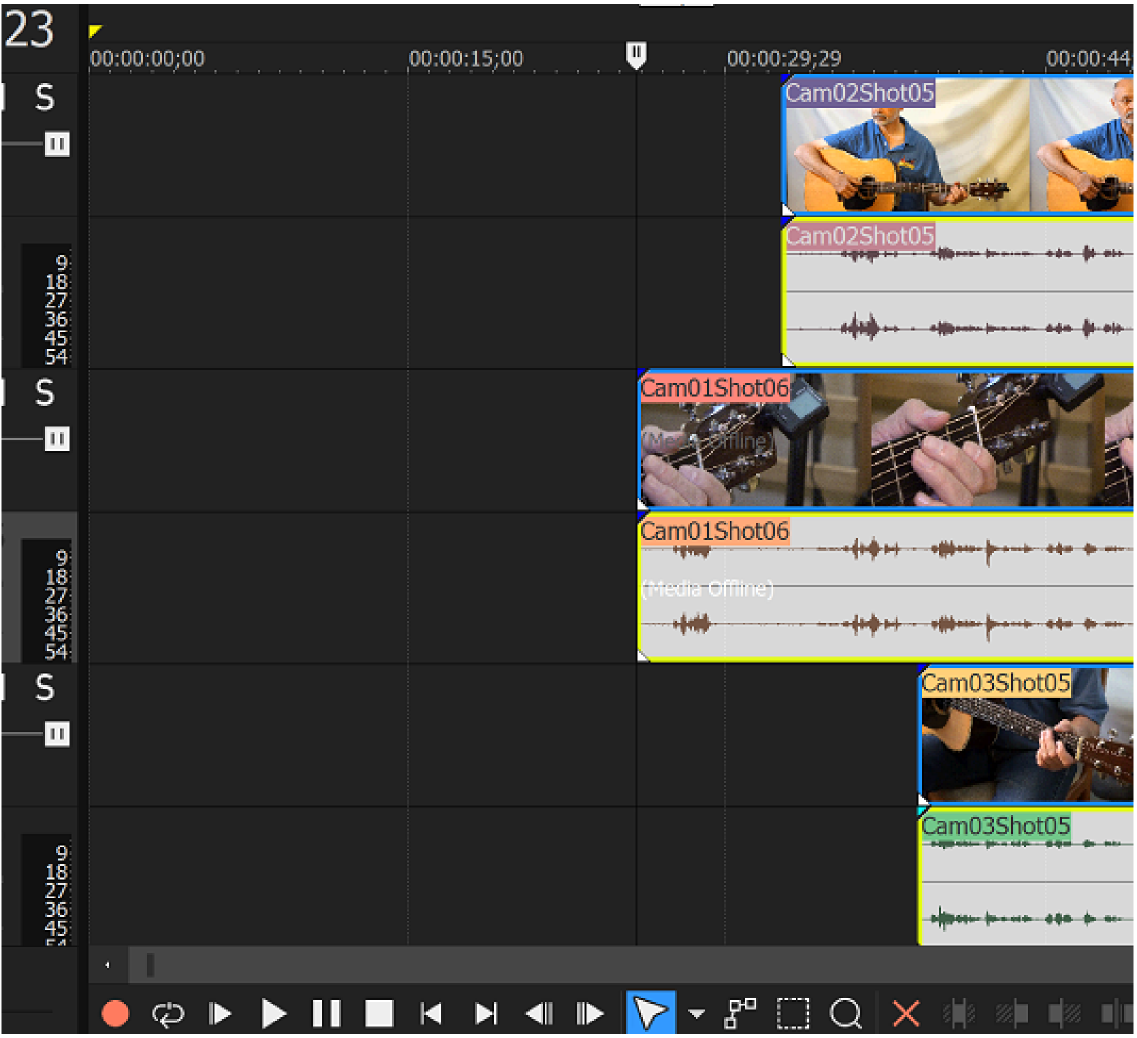
> **NOTE** In this process the whole audio data is analyzed to find similarities so this can take a while with longer recordings.

Synchronizing Multicamera Audio

new since VEGAS Pro 22

Synchronizing multicam events based on the audio from the clips the events hold has been completely reworked. You can now select multiple events and quickly synchronize them with options optimized for the type of audio contained in the clips.


+25;23
00:00:00;00
00:00:15;00
Cam02Shot05
Cam02Shot05
Cam01Shot06
(Media Offline)
Cam01Shot06
(Media Offline)
Cam03Shot05
Cam03Shot05


23
00:00:00;00
00:00:15;00
00:00:29;29
00:00:44
Cam02Shot05
Cam02Shot05
Cam01Shot06
(Media Offline)
Cam01Shot06
(Media Offline)
Cam03Shot05
Cam03Shot05

To synchronize files based on the audio (and they can be audio-only files, video files with audio, or a mix) first add each file to separate tracks so each now sits on a different track than each of the others. Of course, for synchronization to work, the files must have been recorded simultaneously so that they contain exactly the same source audio. It's best if none of the files starts at the very beginning of the timeline.

The synchronization process will move timeline clip events as necessary to line the audio of each file and any of the events may need to move earlier or later on the timeline. If one of your events needs to move toward the start of the timeline, but it's already sitting at the very beginning, the synchronization will fail since the event can't move any further to the left. Give yourself some space between the start of the project and the start of the events on your timeline.

Click the audio event that you consider to be the “target” event, that is, the event you want to match the others to. This event will not move, and each of the other events will move to accomplish the synchronization. Now, hold the Ctrl key while you click on each other audio event that you want to synchronize. As you see in the image above, each of the audio events has been selected (indicated by the yellow highlight) while their grouped video events have not been (indicated by the blue highlight).

Now choose Tools | Multicamera. Depending upon the audio material in your files, select the most appropriate of the synchronization options at the top of the cascading menu. For instance, my file contains both speaking and music, so I choose the Synchronize Mixed Audio to Align Events. VEGAS Pro analyzes your audio files and moves repositions the events as needed to synchronize them. If the first synchronization type you use doesn’t give you results that you’re happy with, undo the edit and try a different type.

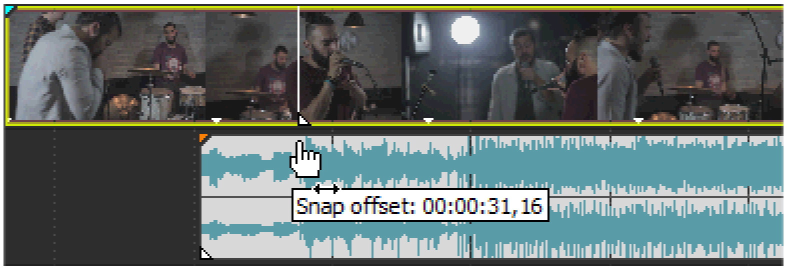
Once the events are synchronized, you can enter Multicamera editing mode and edit your project.

Adjusting alignment using video

You can also align your events using the video.

> **NOTE** These steps require snapping to be enabled, so if you have not already done so, turn snapping on by clicking the ENABLE SNAPPING button. For more information, see Enable snapping

1. Solo the video track.
2. Position the cursor at the synchronization point and drag the event’s snap offset so it snaps to the cursor.



3. Repeat these steps for each clip.
4. Drag the cursor to a snap point, and then snap the other clips to the cursor.

Creating multicamera events

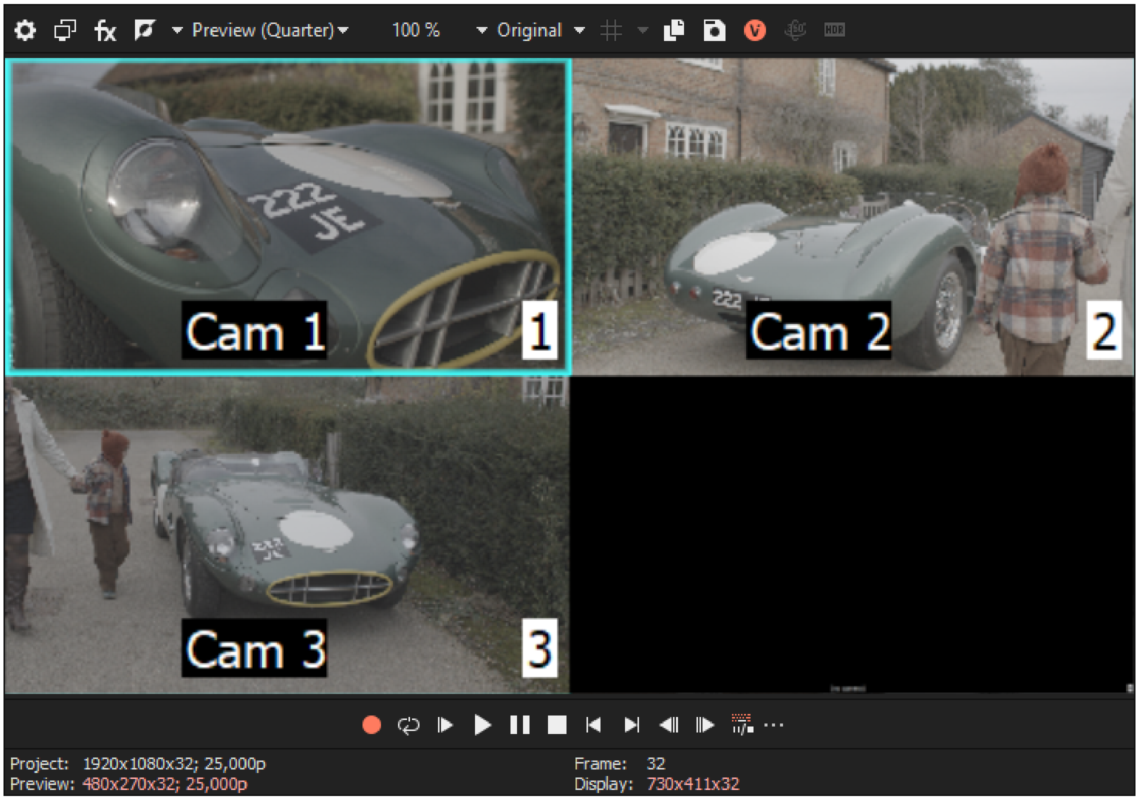
VEGAS Pro uses takes for multicamera editing. While the multicamera editing feature can be used with any multitake video event, VEGAS Pro makes it easy to build multitake events for multicamera editing.

For more information, see Using takes as alternate versions of events

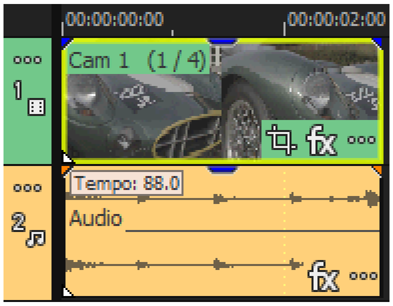
1. When VEGAS Pro creates multitake events from your camera tracks, the take order will match the track order. As a result, it’s a good idea to first reorder your tracks if you have a particular order you prefer (wide shot, medium shots, hand-held).
2. Once all of your cameras are laid out across tracks, synchronized, and ordered to your satisfaction, select the tracks from which you want to create a multicamera track (or press Ctrl+A to select all tracks).

   For more information about synchronizing your video, see Synchronizing video in multicamera projects
3. From the Tools menu, choose MULTICAMERA, and choose CREATE MULTICAMERA TRACK from the submenu. VEGAS Pro builds a set of tracks containing a series of events, with takes representing each of the cameras.

   A new event is created for each time a camera was started and stopped, as well as empty "(no camera)" takes for video events where cameras were missing.


Preview (Quarter)
100 %
Original
Cam 1
1
Cam 2
2
Cam 3
3

Project: 1920x1080x32; 25,000p
Preview: 480x270x32; 25,000p
Frame: 32
Display: 730x411x32


00:00:00:00
00:00:02:00
1
Cam 1 (1 / 4)
2
Tempo: 88.0
Audio

> **IMPORTANT** If you have envelopes, effects, or motion applied to the original camera tracks, these will be lost during this operation.

4. You're now ready to start editing your multicamera video.

For more information, see Editing multicamera video

Editing multicamera video

Once you have synchronized multitake events, you can use multicamera editing mode to choose takes and switch cameras. This can be done while VEGAS Pro is paused for cuts at precise points (such as certain timecodes or beat markers), or it can be done live during playback. Playback continues even when a take is chosen.

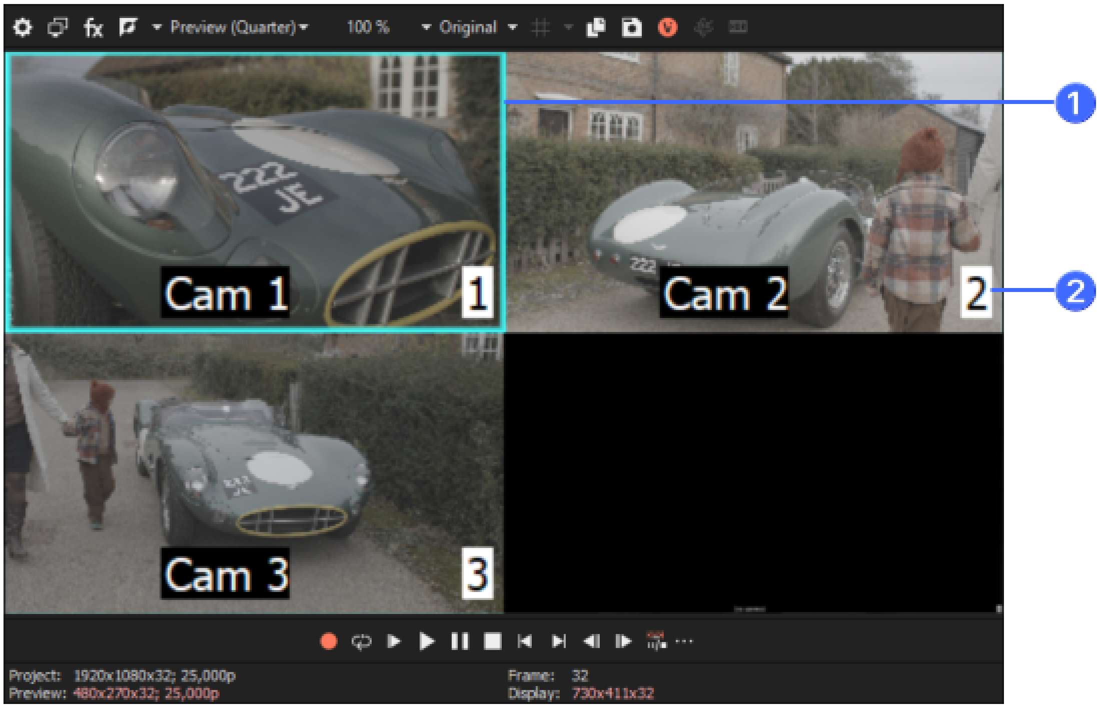
> **TIP** When multicamera editing mode is active, video envelopes, effects, and motion are bypassed in the Video Preview window to preserve your playback frame rate.

Enabling multicamera editing mode

To edit multicamera video in VEGAS Pro, you must enable multicamera editing mode. From the Tools menu, choose MULTICAMERA, and choose ENABLE MULTICAMERA EDITING from the submenu.

Previewing multiple takes

In multicamera editing mode, the Video Preview window switches into multicamera mode, with a multicamera tiled view showing the contents of all takes simultaneously. The active take is highlighted with a colored border.



Project: 1920x1080x32; 25,000p
Preview: 480x270x32; 25,000p
Frame: 32
Display: 730x411x32

1 The active take is highlighted.

2 Camera or take name and number is displayed by default.

NOTE

- VEGAS Pro can preview many takes at once in multicamera mode, but your computer performance will limit the playback frame rate.
- If you have multiple video tracks and/or overlapping video events, the topmost multitake event is displayed in the Video Preview window. Single-take events, such as title overlays, are ignored. When there are multiple video tracks, the topmost event is the one on the topmost track. When there are overlapping events on the same track, the topmost event is the one to the right.

Toggling the display of camera/take name and number information in the Video Preview window

The camera and take name and number information display in the Video Preview window by default. You can toggle the display of this information from the Video tab of the Preferences window.

ⓘ For more information, see Video Tab

> **TIP** You can also toggle the display of take names on events in the timeline. From the View menu, choose ACTIVE TAKE INFORMATION.

1. From the Options menu, choose PREFERENCES, and then click the Video tab.
2. To turn off display of take name information, clear the DISPLAY TAKE NAMES check box. To turn off display of take number information, clear the DISPLAY TAKE NUMBERS check box.

Setting the active take indicator color

You can select the color that highlights the active take in the Video Preview window.

1. From the Options menu, choose PREFERENCES, and then click the Video tab.
2. Click the ACTIVE TAKE INDICATOR color swatch to display a color picker, where you can choose any color using the RGBA or HSLA controls. Click the ▦ button to switch between RGB and HSL color modes, or click the eyedropper to sample a color from your screen.

Previewing the full frame on an external monitor

You can choose to preview the full frame on an external monitor while in multicamera mode. This allows you to see the final output without leaving multicamera mode.

From the Tools menu, choose MULTICAMERA, and then choose SHOW FULL FRAME IN EXTERNAL MONITOR to toggle this option on or off.

Choosing takes

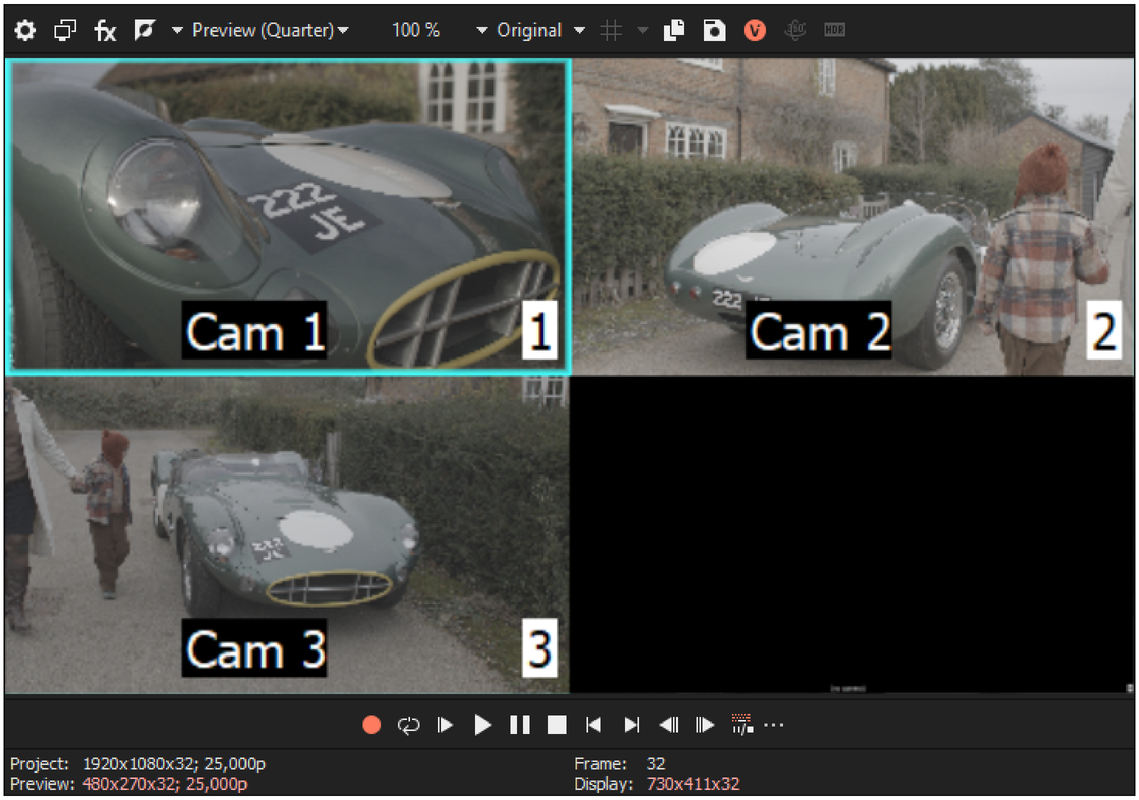
There are several methods you can use for choosing takes, such as pressing number keys or by clicking the takes in the Video Preview window. When you choose a take, VEGAS Pro switches the active take for the multicamera event.

> **TIP** Holding the Ctrl key while choosing a take will create a crossfade instead of a cut, with the alignment and duration determined by the CUT-TO-OVERLAP CONVERSION settings from the Editing tab of the Preferences dialog. For more information, see Editing Tab

In the Video Preview window, camera changes are displayed as the active take indicator moving across takes. When multicamera mode is off, you'll see camera changes in the video output.

To change takes, VEGAS Pro splits the event at the call point and switches the active take.

> **NOTE** Empty takes [those marked with "(no camera)"] cannot be chosen.



Project: 1920x1080x32; 25,000p
Preview: 480x270x32; 25,000p

Frame: 32
Display: 730x411x32

Recutting sections

You can change the take used for an entire time selection. When possible, events using the same take are merged. If a take is not available for part of the time selection, those events are unchanged.

There are several methods you can use for choosing takes, such as pressing number keys or by clicking the takes in the Video Preview window. When you choose a take, VEGAS Pro switches the active take for the multicamera event.

> **TIP** Holding the Ctrl key while choosing a take will create a crossfade instead of a cut, with the alignment and duration determined by the CUT-TO-OVERLAP CONVERSION settings from the Editing tab of the Preferences dialog. For more information, see Editing Tab

In the Video Preview window, camera changes are displayed as the active take indicator moving across takes. When multicamera mode is off, you'll see camera changes in the video output.

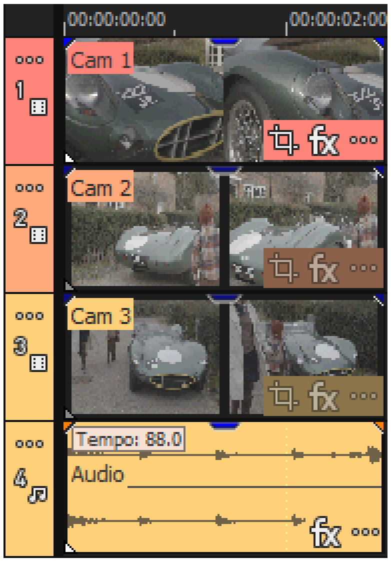
To change takes, VEGAS Pro splits the event at the call point and switches the active take.

> **NOTE** Empty takes [those marked with "(no camera)"] cannot be chosen.

Expanding a multicamera track to multiple tracks

VEGAS Pro can expand a multicamera track to multiple component tracks.

1. Select a multicamera track in the track list.
2. From the TOOLS menu, choose MULTICAMERA, and then choose EXPAND TO MULTIPLE TRACKS from the submenu.
3. You are prompted to either keep unused takes as muted events or delete them. If you keep unused takes as muted events, you can recreate your multicamera track later. Click YES to keep unused takes or NO to delete them.



Resetting camera changes

To reset a range of time to use a single take (perhaps in order to redo the take choosing), select a range of events in the timeline and right-click one event. From the shortcut menu, choose TAKE, and then choose the take to use for all selected events.

Turning off multicamera editing mode

From the Tools menu, choose MULTICAMERA, and choose ENABLE MULTICAMERA EDITING from the submenu to turn off multicamera editing mode once you have completed your multicamera editing.

In normal editing mode, the output displays only the active take for each event. If necessary, use traditional VEGAS Pro editing tools to refine the edit. You can re-enable the multicamera editing mode and do further take choosing at any time.

Using hardware controllers

VEGAS® Pro supports several types of hardware devices you can use to adjust controls in the user interface, from a full-featured, professional control surface to a simple gaming joystick.

A hardware controller lends a tactile element to your editing sessions, providing a hands-on feel that your mouse just can't duplicate.

Using a control surface

A control surface is a hardware device that uses knobs, faders, and buttons to control user interface elements that are normally controlled with a mouse. Using a control surface lends a tactile feel to your editing sessions.

Unlike keyboard shortcuts—which determine the shortcut's behavior based on the portion of the VEGAS Pro window that has focus—a control surface's mapped functions work no matter what part of the application has focus.

Connecting your control surface

You can use one Mackie Control Universal (with up to four Mackie Control Universal Extenders), one Frontier TranzPort, one PreSonus FaderPort, and up to five generic control surfaces with VEGAS Pro.

If you’re using Mackie Control Extenders, you'll need a multiport MIDI interface with MIDI In/Out ports for each device.

Perform the following steps for each device.

1. Connect the MIDI Out port on your MIDI interface to the MIDI In port on your control surface.
2. Connect the MIDI In port on your MIDI interface to the MIDI Out port on your control surface.
3. If you're using Mackie Control Extenders, repeat Steps 1 and 2 for each Mackie Control Extender.

> **NOTE** If you're using a USB interface such as the Frontier TranzPort, just plug in the USB cable.

Configuring VEGAS Pro to use your control surface

Use the MIDI tab in the Preferences dialog to select the device to which your control surface is connected.

1. From the Options menu, choose PREFERENCES to display the Preferences dialog.
2. Enable your MIDI input and output ports:
   a. Select the MIDI tab in the Preferences dialog. ⓘ For more information, see MIDI Tab
   b. In the MAKE THESE DEVICES AVAILABLE FOR MIDI OUTPUT box, select the checkbox for the MIDI port that is connected to your control surface's In port.

   c. In the MAKE THESE DEVICES AVAILABLE FOR MIDI INPUT box, select the checkbox for the MIDI port that is connected to your control surface's Out port.
   d. Click APPLY.
3. Choose your control surface:
   a. Select the External Control & Automation tab in the Preferences dialog. For more information, see External Control & Automation Tab
   b. Choose a device from the AVAILABLE DEVICES drop-down list and click the ADD button. Adding a device loads its default profile. If you want to customize the behavior of the control surface, double-click its entry in the ACTIVE CONTROL DEVICES list.
4. Click OK to apply your changes and close the Preferences dialog.

Configuring or customizing your control surface

Use the External Control & Automation tab in the Preferences dialog to select the control surfaces you want to use and adjust their configuration.

1. From the Options menu, choose PREFERENCES to display the Preferences dialog.
2. Select the External Control & Automation tab. For more information, see External Control & Automation Tab
3. Choose a device from the AVAILABLE DEVICES drop-down list and click the ADD button. The device is added to the ACTIVE CONTROL DEVICES list.
4. Double-click the entry in the ACTIVE CONTROL DEVICES list to display the configuration dialog.
   - For information about setting up a Mackie control, see Using a Mackie Control
   - For information about setting up a Frontier TranzPort, see Using a Frontier TranzPort

- For information about setting up a PreSonus FaderPort, see Using a PreSonus FaderPort
- For information about setting up a generic MIDI control, see Using a Generic Control Surface

Using your control surface

This section describes how to use your control surface in general terms.

For information about your specific device, please refer to the manufacturer's documentation.

1. From the Options menu, choose EXTERNAL CONTROL to enable your selected control surfaces.
2. If necessary, press the AUTOMATION button on your control surface.
3. Click the AUTOMATION SETTINGS button for each track you want to edit with the control surface and choose AUTOMATION WRITE (TOUCH) or AUTOMATION WRITE (LATCH) to enable automation recording. For more information, see Recording track envelope and keyframe automation

   To enable automation recording for audio busses or the main video output, use audio bus tracks or the video bus track. For more information, see Audio bus tracks and Video bus track
4. Use the functions on your control surface to edit your project.

Using a Mackie Control

The Mackie Control is fully supported by VEGAS Pro. An overlay is available from Mackie that you can use to label the Mackie Control buttons and controls with their mapped functions in VEGAS Pro:http://www.mackie.com.

The overlay identifies the default control mapping. You can also customize the buttons and controls on the Mackie control. When you use the default mapping, the Mackie Control is divided into several functional areas. All functionality described in this topic refers to the default control mapping.

For information about your Mackie Control, please refer to the manufacturer's documentation.

For more information about setting up a control surface, see Using a control surface

> **IMPORTANT** The Mackie Control Universal can control either trim or automation settings. In order to control automation settings, the AUTOMATION button in the Audio/Video section must be selected, and the track or bus you want to edit must be set to AUTOMATION WRITE (TOUCH) or AUTOMATION WRITE (LATCH). Hold the F1 button while turning the V-Pot (or use the AUTOMATION SETTINGS button) to change the automation recording mode for each track and bus track.

Configuring channel mappings for Mackie Control Extenders

If you're using Mackie Control Extenders, you'll need to set up your channel mapping.

For example, if your Mackie Control Universal is on the left of your Mackie Control Extender, you could configure the Mackie Control to adjust channels 1 through 8 and use the Mackie Control Extender to adjust channels 9 through 16.

If you have a Mackie Control Universal positioned between two Mackie Control Extenders, you could adjust channels 1 through 8 on the left Extender, adjust channels 9 through 16 on the Mackie Control Universal, and adjust channels 17 through 24 on the right Extender.

1. From the Options menu, choose PREFERENCES to display the Preferences dialog.
2. Select the External Control & Automation tab.
3. Double-click your Mackie Control in the ACTIVE CONTROL DEVICES list to display the Configure Mackie Control dialog.

   The current channel mapping is displayed on each device's LCD.
4. Choose the channels you want to control with the Mackie Control Universal:
   a. From the DEVICE TYPE drop-down list, choose MACKIE CONTROL.
   b. From the CHANNEL MAPPING drop-down list, choose the channels you want to adjust with the Mackie Control Universal.
5. Choose the channels you want to control with the Mackie Control Extender:

   a. From the DEVICE TYPE drop-down list, choose MACKIE CONTROL EXTENDER.
   b. From the CHANNEL MAPPING drop-down list, choose the channels you want to adjust with the Mackie Control Extender.
6. Repeat Step 5 for each Mackie Control Extender.
7. Click OK to apply your changes and close the Configure Mackie Control dialog.
8. Click OK to apply your changes and close the Preferences dialog.

Configuring or customizing control mappings

Use the External Control & Automation tab in the Preferences dialog to select the control surfaces you want to use and adjust their configuration. For more information, see [External Control & Automation Tab]

> **TIP** When you customize your control mappings, button functions may not match the labels on the overlay. You can click the DEFAULT ALL button in the Configure Mackie Control dialog to restore the default settings.

1. From the Options menu, choose PREFERENCES to display the Preferences dialog.
2. Select the External Control & Automation tab.
3. Double-click your Mackie Control in the ACTIVE CONTROL DEVICES list to display the Configure Mackie Control dialog.
4. To add or change a function do the following:
   a. Select an item in the USER DEFINED SURFACE CONTROL MAPPINGS list.
   b. Select an item in the AVAILABLE HOST FUNCTIONS list.
   c. Click the ASSIGN button.
5. To remove a function, select an item in the USER DEFINED SURFACE CONTROL MAPPINGS list and click the CLEAR button.
6. To remove all functions, click the CLEAR ALL button.

7. To replace all custom functions with the default settings, click the DEFAULT ALL button.

Channel section (not shown)

The channel section includes V-Pots (knobs), buttons, and faders that you can use to edit your tracks and busses.

Area	Description
V-Pot	Adjusts values for panning, volume (when FLIP button is selected), video track opacity (when FLIP button is selected), video track fade-to-color, and effect parameter values. - Adjusts track volume when the PAN or SENDS button is selected and the FLIP button is selected. - Adjusts audio track panning when the PAN button is selected. - Adjusts bus send levels when the SENDS button is selected. - Adjusts video track opacity when the VIDEO and FLIP buttons are selected. - Adjusts video track fade-to-color envelope when the VIDEO button is selected, the AUTOMATION button in the Audio/Video section is selected, and the track is in AUTOMATION WRITE (TOUCH) or AUTOMATION WRITE (LATCH) mode. - Adjusts the track compositing mode when the VIDEO button is selected and you press the OUTPUT/COMPOSITING button twice to change the track assignment to CO. - Adjusts effect parameters when the INSERTS button is selected. The V-Pot is velocity sensitive, so rotating quickly changes values quickly, and you can press the button to choose a selection. When the PAN or SENDS button is selected, press the V-Pot to edit the track or bus effects chain.
Rec/Rdy button	Arms audio tracks for recording. For more information, see Recording audio
Signal LED	Indicates whether an audio track or bus is outputting a signal.

Area	Description
Solo button	Press to solo a track or remove it from the solo group.
Mute button	Press to mute or unmute a track.
Select button	Press to select a track.

Area	Description
Fader	Adjusts the track or bus level (unless the FLIP button is selected). When the AUTOMATION button is selected, the fader adjusts the automation envelope if the track is in AUTOMATION WRITE (TOUCH) or AUTOMATION WRITE (LATCH) mode. The fader can also adjust settings for the following items when you select other buttons in the Channel section. ● Adjusts audio track panning when the PAN and FLIP buttons are selected. ● Adjusts bus send levels when the SENDS and FLIP buttons are selected. ● Adjusts video track opacity when the VIDEO button is selected. ● Adjusts video track fade-to-color settings when the AUTOMATION, VIDEO, and PAN/FADE TO COLOR buttons are selected. ● Adjusts video track fade-to-color envelope when the following conditions are met: ◉ The VIDEO button is selected. ◉ The AUTOMATION button in the Audio/Video section is selected. ◉ The PAN/FADE TO COLOR button is selected. ◉ The track is in AUTOMATION WRITE (TOUCH) or AUTOMATION WRITE (LATCH) mode. The fader is touch sensitive, so if you're recording automation parameters, recording will begin when you touch the fader and stop when you release it. The current setting is displayed in the Mackie Control display.

Footswitches (not shown)

The Mackie Control has two switched inputs (labeled USER SWITCH A and USER SWITCH B) that you can use to connect footswitches.

By default, footswitch A toggles playback, and footswitch B starts and stops recording.

You can customize the footswitches in the Configure Mackie Control dialog. Double-click MACKIE CONTROL in the Active control devices list on the External Control & Automation tab of the Preferences dialog to display the Configure Mackie Control dialog.

Control buttons

The buttons in the Control section determine the operation of the V-Pots and faders in the channel section of your Mackie Control. In every mode, the fader adjusts track volume, and the V-Pot adjusts the selected control mode. You can press the FLIP button to reverse the V-Pot and fader function.

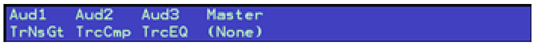
Button	Description
Output / Compositing	Press the OUTPUT button to set the output device for each track or bus. Turn the V-Pot in the channel section to choose an output device and press the V-Pot to select it. When the VIDEO button is selected, you can set the compositing mode for each track using the V-Pot.
Input / Motion Blur	Press to set the recording input device for each track. Turn the V-Pot in the channel section to choose an input device and press the V-Pot to select it. When the VIDEO button is selected, press the V-Pot to enable or bypass motion blur for each video track.
Pan / Fade to Color	Press to adjust track panning using the V-Pot in the channel section. In 5.1 surround projects, pressing the Pan button toggles left-to-right panning, front-to-rear panning, and center-channel level adjustment using the V-Pot. When the VIDEO button is selected, you can adjust the opacity of video tracks with the fader in the channel section and adjust fade-to-color settings with the V-Pot when the AUTOMATION button in the Audio/Video section is selected and the track is in AUTOMATION WRITE (TOUCH) or AUTOMATION WRITE (LATCH) mode.
Sends	Press to adjust bus and assignable effects send levels. Press the SENDS button to scroll through the available busses and assignable effects chains, and then turn the V-Pot to adjust the send level.

Button **Description**

Inserts

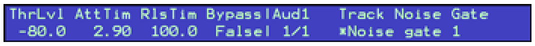
Press to adjust effects settings.

Press the button once to display PL in the Mackie Control Assignment display. The Mackie Control LCD displays the effects that are assigned to each track or bus. The following example shows a three-track project:



```
Aud1   Aud2   Aud3   Master
TrNsGt TrcCmp TrcEQ  (None)
```

Turn the V-Pot to scroll through the effects, and press the V-Pot to edit the current effect. In editing mode, PE is displayed in the Assignment display. The following example shows the settings for the Noise Gate plug-in on track one:

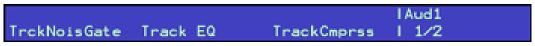


```
ThrLvl AttTim RlsTim Bypass|Aud1   Track Noise Gate
 -80.0   2.90  100.0  False| 1/1   *Noise gate 1
```

PE mode uses the following controls:

- V-Pots 1 - 4: Turn to edit the effect's parameters. For switch parameters such as Bypass, press the V-Pot to change the setting.
- V-Pot 5: Turn to scroll through an effect's property pages.
- V-Pot 6: Turn to choose from a plug-in's available presets. Press the V-Pot to choose a preset.
- V-Pot 7: Turn to edit the current effect for a different channel.
- V-Pot 8: Turn to choose other effects for the current channel.

Press the INSERTS button again to view effects chains. PS is displayed in the Assignment display. The following example shows the effects chain on track one:



```
                                    |Aud1
TrckNoisGate  Track EQ      TrackCmprss  | 1/2
```

PS mode uses the following controls:

Button	Description
	● V-Pots 1, 3, and 5: Turn to choose other effects for the current channel. Press to edit the selected effect and enter PE mode. ● V-Pots 2, 4, and 6: After choosing an effect with V-Pot 1, 3, or 5, press V-Pot 2, 4, or 6 to add it to the channel. ● V-Pot 7: If a channel has multiple pages of effects in the chain, turn to display additional effects. In the previous example, AUD 1 1/2 means that track one has two pages of effects. ● V-Pot 8: Turn to choose effects chains for other channels. When <NO INSERT> is displayed above a V-Pot, you can turn the V-Pot to view effects that you can add to the chain. New effects are displayed with a *. Press the next V-Pot (to the right) to add the effect.

Button	Description
Settings	Press to adjust track or bus settings using the F1 through F6 buttons. ● F1: Hold the button and turn the V-Pot to change the automation recording mode for each track and bus track. For more information, see Recording track envelope and keyframe automation ● F2: Hold the button and turn the V-Pot to change the current panning mode. For more information, see Audio panning modes ● F3: Hold the button and press the V-Pot to change the track phase. ● F4: Hold the button and turn the V-Pot to change record input monitoring settings when you're using an ASIO audio device. For more information, see Recording audio ● F5: When the SENDS button is selected, press the SETTINGS button and hold F5 while pressing the V-Pot to change a track's bus or assignable effects send level to Pre Volume or Post Volume. Press the SENDS button to scroll through the available bus and effects sends. For more information, see Recording audio ● F6: Press the SETTINGS button and hold F6 while pressing the V-Pot on a channel to return the channel's settings to the track defaults. For more information, see Setting default track properties

Fader Banks buttons

The Fader Banks buttons control the behavior of the channel section controls.

Button	Description
Bank	Press the left or right arrow button to scroll the channels 8 units at a time. For example, if tracks 1-8 are currently displayed, pressing the right arrow will change to tracks 9-16.
Channel	Press the left or right arrow button to scroll the channels 1 unit at a time. For example, if tracks 1-8 are currently displayed, pressing the right arrow will change to tracks 2-9. Hold the OPTION button while pressing either Channel button to change track order. For example, if track two is selected and you press OPTION+ < CHANNEL, track two becomes track one. Conversely, if track one is selected and you press OPTION + CHANNEL >, track one becomes track two.
Flip	Press to exchange the behavior of the fader and V-Pot when allowed.
Video	Press to toggle audio and video modes. For example, you press the PAN/FADE button in audio mode, you can perform audio track panning with the V-Pot. If you press the button in video mode, you can adjust fade-to-color settings if the AUTOMATION button in the Audio/Video section is selected and the track is in AUTOMATION WRITE (TOUCH) or AUTOMATION WRITE (LATCH) mode.

Display buttons

The Display buttons control the Mackie Control LCD display.

Button	Description
Meters/Values	When you're working with audio tracks or busses, press to display meters or numeric values. Even in Meters mode, numeric values are displayed when you edit a value. In Audio mode, hold the SHIFT button in the Modifiers section while pressing the METERS/VALUES button to toggle control of tracks, busses, or tracks and busses. ● Press once to show audio tracks. ● Press again to show audio tracks. ● Press again to show busses. ● Press again to show tracks and busses.
Time Fmt Zero	Press and hold to display the current time format. Turn V-Pot 8 while holding the button to change the format. Hold the SHIFT button in the Modifiers section while pressing the TIME FMT/ZERO button to set the current cursor position to zero.

Markers buttons

The Markers buttons control additional track and channel settings.

Button	Description
Marker 1/9 Automation Mode	Press to place the cursor at marker 1, or hold Shift and press to place the cursor at marker 9. When the SETTINGS button is selected, hold the button and turn the V-Pot to change the automation recording mode for each track and bus track. ℹ For more information, see [Recording track envelope and keyframe automation]()
Marker 2/10 Pan Mode	Press to place the cursor at marker 2, or hold Shift and press to place the cursor at marker 10. When the SETTINGS button is selected, hold the button and turn the V-Pot to change the current panning mode. ℹ For more information, see [Audio panning modes]()
Marker 3/11 Track Phase	Press to place the cursor at marker 3, or hold Shift and press to place the cursor at marker 11. When the SETTINGS button is selected, hold the button and press the V-Pot to change the track phase.
Marker 4/12 Input Monitor	Press to place the cursor at marker 4, or hold Shift and press to place the cursor at marker 12. When the Settings button is selected, hold the button and turn the V-Pot to change record input monitoring settings when you're using an ASIO audio device. ℹ For more information, see [Recording audio]()

Button	Description
Marker 5/13 Pre/Post	Press to place the cursor at marker 5, or hold Shift and press to place the cursor at marker 13. When the PAN button is selected, press the SETTINGS button and then hold F5 while pressing the V-Pot to change the bus or assignable effects output fader to Pre FX or Post FX. When the SENDS button is selected, press the SETTINGS button and hold F5 while pressing the V-Pot to change a track's bus or assignable effects send level to Pre Volume or Post Volume. Press the SENDS button to scroll through the available bus and effects sends.
Marker 6/14 Default	Press to place the cursor at marker 6, or hold Shift and press to place the cursor at marker 14. Press the SETTINGS button and hold F6 while pressing the V-Pot on a channel to return the channel's settings to the track defaults. For more information, see Setting default track properties
Marker 7/15	Press to place the cursor at marker 7, or hold Shift and press to place the cursor at marker 15.
Marker 8/16	Press to place the cursor at marker 8, or hold Shift and press to place the cursor at marker 16.

Add New buttons

The Add New buttons add busses or tracks to your project.

Button	Description
Track	Press to add a new audio track. When the VIDEO button is selected, a new video track is added.
Bus	Press to add an audio bus to your project.

Windows buttons

The Windows buttons control the display of various VEGAS Pro windows.

Button	Description
Master Bus	Press to show the Master Bus window. If the window is not docked, pressing the button shows/hides the window.
Video Preview	Press to show the Video Preview window. If the window is not docked, pressing the button shows/hides the window.
Plug-Ins	Press to show the Plug-In Manager window. If the window is not docked, pressing the button shows/hides the window.

View buttons

The View buttons control the display of various sections of the VEGAS Pro window.

Button	Description
Bus Tracks	Press to show or hide audio bus tracks in the VEGAS Pro timeline. When the Video button is selected, press to show or hide the video bus track. For more information, see Audio bus tracks and Video bus track
Dock Area	Press to show or hide the Window Docking Area at the bottom of the VEGAS Pro window.
Track List	Press to show or hide the track list in the timeline.

Modifiers buttons

The Modifiers buttons extend the functionality of other buttons on the Mackie Control.

Button	Description
Shift	Hold the SHIFT button while pressing a button labeled with inverse text to perform the `Shift` function. For example, hold SHIFT while pressing the UNDO/REDO button to reverse an undo action.

Button	Description
Option/ Track Order	Hold the OPTION/TRACK ORDER button while pressing a button in the Settings, Add New, or Windows group for alternative functions. Hold the OPTION/TRACK ORDER button while pressing a the CHANNEL < or CHANNEL > button to change track order. Hold the OPTION/TRACK ORDER button while pressing F1 to F16 to perform custom functions you can define. See the Configure or customize your control mappings heading in this section for more information.

Use the External Control & Automation tab in the Preferences dialog to select the control surfaces you want to use and adjust their configuration.

1. From the Options menu, choose PREFERENCES to display the Preferences dialog.
2. Select the External Control & Automation tab.
3. Double-click your Mackie Control in the ACTIVE DEVICES list to display the Configure Mackie Control dialog.
4. To add or change a function do the following:
   - Select an item in the USER DEFINED SURFACE CONTROL MAPPINGS list.
   - Select an item in the AVAILABLE HOST FUNCTIONS list.
   - Click the ASSIGN button.
5. To remove a function, select an item in the USER DEFINED SURFACE CONTROL MAPPINGS list and click the CLEAR button.
6. To remove all functions, click the CLEAR ALL button.
7. To replace all custom functions with the default settings, click the DEFAULT ALL button.

For more information, see External Control & Automation Tab

Button	Description
Ctrl	Hold the CTRL button while using a control for alternative functions.
Alt	Hold the ALT button while using a control for alternative functions. Hold ALT while pressing F1 through F10 to run scripts 1-10 from the Tools | Scripting submenu.

Audio/Video buttons

The Audio/Video buttons control various audio and video settings for your project.

Button	Description
Automation	Press to place the controls on the Mackie Control in automation mode. The controls in the channel section of the Mackie Control will affect the automation parameters on the track or bus if AUTOMATION WRITE (TOUCH) or AUTOMATION WRITE (LATCH) mode is selected. When the button is not selected, the buttons control trim (static) values. For more information, see Using automation
Bypass FX	Press to bypass/enable all audio effects.
Metronome	Press to turn the metronome on or off. For more information, see Using the metronome
Surround/ Ext Monitor	Press to toggle the project properties between stereo and 5.1 surround mode. When the VIDEO button is selected, press the SURROUND/EXT MONITOR button to send your video preview to an external monitor.
Downmix/ Split Screen	Press to toggle the state of the DOWNMIX OUTPUT button in the Master Bus window. When the VIDEO button is selected, press the DOWNMIX/SPLIT SCREEN button to toggle split-screen video previews.
Dim/ Overlays	Press to toggle the state of the DIM OUTPUT button in the Master Bus window. When the VIDEO button is selected, press the DIM/OVERLAYS button to toggle the display of overlays (grid, safe areas, and RGB channels) in the Video Preview window.

Project buttons

The Project buttons perform various project-level commands.

Button	Description
Save	Press to save your project.
Undo/Redo	Press to reverse edit operations. Hold SHIFT while pressing the button to reverse an undo operation.
OK	Not used.
Cancel	Not used.

Timeline buttons

The Timeline buttons perform various commands for the project timeline.

Button	Description
Marker/ CD Index	Press to place a marker at the cursor position. Hold the SHIFT button while pressing the MARKER/CD INDEX button to place a CD index marker at the cursor position. Hold the CTRL button while pressing the MARKER/CD INDEX button to remove a marker. Hold the CTRL and SHIFT buttons while pressing the MARKER/CD INDEX button to remove a CD index marker. For more information, see Using markers, regions, and commands
Region/ CD Track	Press to convert the current selection to a region. Hold the SHIFT button while pressing the REGION/CD TRACK button to convert the current selection to a CD track region. Hold the CTRL button while pressing the REGION/CD TRACK button to remove a region. Hold the CTRL and SHIFT buttons while pressing the REGION/CD TRACK button to remove a CD track.
Loop/ Select	Press to toggle looped playback mode. Hold the SHIFT button while pressing the LOOP/SELECT button to create a time selection from the loop region.
Mark In/ Go to In	Press to set the beginning of the loop region at the cursor position. Hold the SHIFT button while pressing the MARK IN/GO TO IN button to move the cursor to the beginning of the loop region.
Mark Out/ Go to Out	Press to set the end of the loop region at the cursor position. Hold the SHIFT button while pressing the MARK OUT/GO TO OUT button to move the cursor to the end of the loop region.

Button	Description
Event Trim/ Center Cursor	Press to toggle event edge-trimming mode. Press the right or left arrow button to select the next or previous event edge, and then turn the jog dial to trim the event edge. Hold the SHIFT button while pressing the EVENT TRIM/CENTER CURSOR button to center the cursor in the timeline view. For more information, see Adjusting an event's length
RTZ/ End	Press to move the cursor to the beginning of the project. Hold the SHIFT button while pressing the RTZ/END button to move the cursor to the end of the project.

Transport buttons (not shown)

The Transport buttons allow you to navigate the timeline and preview your project.

Button	Description
Rewind	Press and hold to move backward through the timeline at 20x speed.
Fast Forward	Press and hold to move forward through the timeline at 20x speed.
Stop	Press to stop playback and return the cursor to its position before playback started. Hold the SHIFT button while pressing the STOP button to create a dynamic RAM preview. For more information, see Using dynamic RAM previews
Play	Press to start playback. Press again to stop playback and leave the cursor at its current position. Hold the SHIFT button while pressing the PLAY button to preview the cursor position. To change the playback duration, use the CURSOR PREVIEW DURATION control on the Editing tab of the Preferences dialog.
Record	Press to start recording. Press again to stop recording and leave the cursor at its current position. Hold the SHIFT button while pressing the RECORD button to render the current selection to a new track.

Arrow buttons (not shown)

The arrow buttons allow you to navigate the timeline and preview your project.

Button	Description
Left/Right	When the ZOOM button is not selected:, • Press the left or right arrow button to move left or right by grid marks. • When the EVENT TRIM button is selected, pressing the left or right arrow button selects the previous or next event edge. You can then use the jog dial to trim the event edge. • Hold SHIFT while pressing the left or right arrow button to select left or right by grid marks. • Hold CTRL while pressing the left or right arrow button to move left or right by edits on the focus track. • Hold CTRL + SHIFT while pressing the left or right arrow button to select left or right by edits on the focus track. When the ZOOM button is selected: • Press the left or right arrow button to move left or right by pixels (when QUANTIZE TO FRAMES is turned off). • Hold SHIFT while pressing the left or right arrow button to select left or right by pixels. • Hold CTRL while pressing the left or right arrow button to move to the previous or next marker. • Hold CTRL + SHIFT while pressing the left or right arrow button to select to the previous or next marker.

Button	Description
Up/Down	When the ZOOM button is not selected: - Press to change the focus track. - Hold SHIFT while pressing the up or down arrow button to select a range of tracks. When the ZOOM button is selected: - Press to zoom in or out. - Hold SHIFT while pressing the up or down arrow button to change the magnification of audio waveforms. - Hold CTRL while pressing the up or down buttons to zoom to a selection or to the high in/max out. - Hold CTRL+SHIFT while pressing the up or down buttons to change track heights.

Jog dial (not shown)

The jog dial allows you to navigate the timeline and trim events.

Navigating the timeline

When playback is paused and the SCRUB button is not selected, the jog dial performs the following functions:

- When the ZOOM button is not selected, turn the dial clockwise or counterclockwise to navigate the timeline by frames.
- When the ZOOM button is selected, turn the dial clockwise or counterclockwise to navigate the timeline by pixels.
- Hold the SHIFT button and turn the dial to create a time selection or extend a selection.

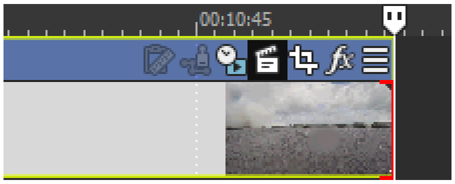
Scrubbing the timeline

During playback, turning the jog dial increases or decreases the playback rate.

When playback is paused and the SCRUB button is selected, turning the jog dial scrubs the timeline.

Trimming events

1. Press the EVENT TRIM button to enter event trimming mode.
2. Press the left or right arrow button to select the event edge you want to trim. A red bracket is displayed to indicate which event edge will be trimmed.



3. Turn the jog dial to trim the event edge left or right in one-frame increments. Hold Ctrl while turning the dial to trim in one-pixel increments. Depending on the current zoom level, the trim duration will vary.

For more information, see Adjusting an event's length and Zooming and magnification

Using a Frontier TranzPort

Using a Frontier TranzPort, you can control VEGAS Pro wirelessly.

For more information about configuring VEGAS Pro to use a control surface, see Using a control surface

View the control mappings

The map for the TranzPort assigns the controls as follows.

Control	Function	Shift Function
Track ◀	Focus to previous track or mixer control.	Insert audio track.
Track ▶	Focus to next track or mixer control.	
Rec	Arm track for record.	
Mute	Mute track.	
Solo	Solo track.	
Undo	Undo.	Redo.
In	Set loop start.	
Out	Set loop end.	
Punch	Toggle metronome.	
Loop	Toggle looped playback.	Toggle jog wheel control of volume, panning, input, or output device for tracks or Mixer controls. 1. Press TRACK ◀ or TRACK ▶ to select the track you want to adjust. 2. Press Shift + Loop until the item you want to edit is displayed on the TranzPort. 3. Hold Shift while rotating the jog wheel to adjust the selected control.
Shift	Toggle alternate functions.	

Control	Function	Shift Function
Markers Prev	Move to previous marker.	
Markers Add	Insert marker at cursor.	
Markers Next	Move to next marker.	
Jog Wheel	Scroll cursor.	Adjust volume or pan for current track.
◀◀	Rewind.	Go to start.
▶▶	Fast forward.	Go to end.
■	Stop playback or recording.	
▶	Play/pause.	
●	Punch in or start recording.	

Adjust track or bus volume

1. Press Track ◀ or Track ▶ to select the track or mixer control you want to adjust.
2. Press Shift+Loop until the TranzPort displays volume.
3. Hold Shift while rotating the jog wheel to adjust the volume of the selected track or mixer control.

Adjust track or bus panning

1. Press Track ◀ or Track ▶ to select the track or mixer controlyou want to adjust.
2. Press Shift+Loop until the TranzPort displays panning.

   > **NOTE** Not all mixer controls allow panning adjustment.

3. Hold Shift while rotating the jog wheel to adjust panning for the selected track or mixer control.

Edit a track's input device

1. Press Track ◀ or Track ▶ to select the track you want to adjust.
2. Press Shift+Loop until the TranzPort displays the track's input device.
3. Hold Shift while rotating the jog wheel to scroll through the available inputs. When you change the input device, an asterisk is displayed before the device name on the TranzPort.
4. Press Shift+Punch to set the input device.

Edit a track or channel strip's output device

1. Press Track ◀ or Track ▶ to select the track or channel strip you want to adjust.
2. Press Shift+Loop until the TranzPort displays the track's output device.
3. Hold Shift while rotating the jog wheel to scroll through the available output devices. When you change the output device, an asterisk is displayed before the device name on the TranzPort.
4. Press Shift+Punch to set the output device.

Using a PreSonus FaderPort

You can use a PreSonus FaderPort to control VEGAS Pro.

For more information about configuring VEGAS Pro to use a control surface, see Using a control surface

Viewing the control mappings

The map for the FaderPort assigns the controls as follows.

Jog dial (not shown)

Control	Function	Shift Function
Fader	Adjusts volume for the active channel.	
Pan	Adjusts panning for the active channel.	
Mute	Mutes the active channel.	
Solo	Solos the active channel.	
Rec	Arm the active track for recording.	
Channel ◄	Scroll to previous track or Mixing Console channel strip. Scrolls by 8 channels when BANK is selected.	
Bank	Toggles scroll channel/bank mode.	
Channel ►	Scroll to next track or Mixing Console channel strip. Scrolls by 8 channels when BANK is selected.	
Output	Master Fader mode.	
Read	Enables channel automation in to Read mode. Press again to turn automation off.	
Write	Enables channel automation in to Write mode. Press again to turn automation off.	
Touch	Enables channel automation in to Touch mode. Press again to turn automation off.	
Off	Turns the fader off.	
Mix	Displays the Mixing Console.	Dim output.
Proj	Switches behavior of fader and rotary knob.	
Trns	Toggles automation for the active channel.	
Undo	Reverses the last action performed.	

Control	Function	Shift Function
Shift	Toggle alternate functions.	
Punch	Toggles the Metronome on or off.	Moves left to the next marker.
User	Toggles metronome count-in.	Move right to the next marker.
Loop	Toggles looped playback.	Add a marker at the cursor position.
◀◀	Rewind.	Go to start.
▶▶	Fast forward.	Go to end.
■	Stop playback or recording.	
▶	Play/pause.	
●	Punch in or start recording. The LED blinks to indicate tracks are armed for recording and illuminates solidly during recording.	Render selected track to a new track.
Footswitch	Toggles playback.	Punch in/out recording.

Adjusting track or bus volume

1. Press Channel ◀ or Channel ▶ to select the track or Mixing Console channel strip you want to adjust.
2. Move the fader to adjust the volume of the selected track or channel strip.

> **TIP** If you want to use the FaderPort knob to adjust channel volume, select the PROJ button.

Adjusting track or bus panning

1. Press Channel ◀ or Channel ▶ to select the track or Mixing Console channel strip you want to adjust.
2. Turn the FaderPort knob to adjust panning for the selected track or channel strip.

> **TIP**
>
> - Not all channel strips allow panning adjustment.
> - If you want to use the FaderPort fader to adjust channel volume, select the PROJ button.

Starting recording

1. Arm the tracks you want to arm:
    a. Press Channel ◀ or Channel ▶ to select the track you want to record into.
    b. Press REC to arm the selected track for recording.
    c. Repeat steps a and b for all tracks you want to arm.
2. Press RECORD ● to begin recording into all armed tracks.
3. When you're done recording, press RECORD ● again to stop.

Using a Generic Control Surface

You can configure up to five generic MIDI control surfaces to work with the VEGAS Pro interface.

For information about your specific device, please refer to the manufacturer's documentation.

For more information about setting up a control surface, see Using a control surface

NOTE

- If you have a MIDI controller that includes buttons and knobs or faders, you can use the device as an external control device. For an example of how you can set up a generic control surface to control tracks in your project, see Configuring a Generic Control Surface
- Effects parameters cannot be adjusted with a generic controller.

IMPORTANT A generic control surface can control either trim or automation settings. In order to control automation settings, you must assign a button to place the control surface in automation mode, and the AUTOMATION SETTINGS button on the track or bus you want to edit must be set to AUTOMATION WRITE (TOUCH) or AUTOMATION WRITE (LATCH).

Customizing your control mappings

Use the External Control & Automation tab in the Preferences dialog to select the control surfaces you want to use and adjust their configuration.

1. From the Options menu, choose PREFERENCES to display the Preferences dialog.
2. Select the External Control & Automation tab.
3. Double-click the Generic Control entry in the ACTIVE CONTROL DEVICES list to display the Configure Generic Control dialog.
4. To add or change a function do the following:
    a. Choose a setting from the VIEW FUNCTION GROUP drop-down list.
    b. Select the LEARN check box.
    c. Select an command in the HOST COMMAND list and activate the control on your control surface.
    d. You can click the EDIT button to fine-tune the MIDI message settings.

5. Repeat step 4 for each command you want to make available on your control surface.

> **TIP**
>
> If you want to control audio and video tracks with your MIDI controller, you'll need to assign buttons to place the controller in Audio and Video mode.
>
> From the VIEW FUNCTION GROUP drop-down list, choose ASSIGN and then assign a MIDI message for the SET AUDIO MODE and SET VIDEO MODE commands.
>
> You can then choose AUDIO CHANNELS from the VIEW FUNCTION GROUP drop-down list to configure controls for audio tracks, and choose VIDEO CHANNELS from the VIEW FUNCTION GROUP drop-down list to configure controls for video tracks.

6. To remove a function, select an item in the HOST COMMAND list and click the RESET button.
7. To remove all functions, click the RESET ALL button.
8. Click the SAVE AS button to save your updated configuration file.

Loading a control mapping file

1. From the Options menu, choose PREFERENCES to display the Preferences dialog.
2. Select the External Control & Automation tab in the Preferences dialog.
3. Double-click the Generic Control entry in the ACTIVE CONTROL DEVICES list to display the Configure Generic Control dialog.
4. Click the OPEN button and browse to the mapping file you want to use.
5. Click OK to apply your changes and return to the Preferences dialog.
6. Click OK to close the Preferences dialog.

Configuring a Generic Control Surface

If you have a MIDI controller that includes buttons and knobs or faders, you can use the device as an external control surface.

For more information, see [Using a control surface]

For example, let's assume that you have a MIDI keyboard that has 8 knobs. This topic will show you how you can use those knobs to control the volume on the tracks in your project.

NOTE

- You can use this same process to assign a controller to any configurable parameter. To adjust track volume, we're selecting CHANNEL X FADER in the HOST COMMAND list in step 9 below. However, if you wanted to adjust panning, you could choose CHANNEL X PAN, or if you wanted to adjust the bus send level, you could choose CHANNEL X SEND.
- Effect parameters cannot be controlled with a generic controller.

IMPORTANT A generic control surface can control either trim or automation settings. In order to control automation settings, you must assign a button to place the control surface in automation mode, and the AUTOMATION SETTINGS button on the track or bus you want to edit must be set to AUTOMATION WRITE (TOUCH) or AUTOMATION WRITE (LATCH).

1. From the Options menu, choose PREFERENCES to display the Preferences dialog.
2. Select the MIDI tab, and verify that the port where your controller is connected is selected in the MAKE THESE DEVICES AVAILABLE FOR MIDI INPUT list.
3. Select the External Control & Automation tab.
4. From the AVAILABLE DEVICES drop-down list, choose GENERIC CONTROL, and then click the ADD button. The Generic Control is added to the ACTIVE CONTROL DEVICES list.

5. Double-click the GENERIC CONTROL entry in the ACTIVE CONTROL DEVICES list to display the Configure Generic Control dialog.
6. Because the MIDI keyboard in our example has 8 knobs, type 8 in the NUMBER OF CHANNELS box.
7. Now, let's assign buttons to shift the channel banks up and down so you can control all the tracks in your project.

   For example, when you start using the controller, the knobs will adjust tracks 1-8. When you shift the banks down, you can control tracks 9-16, and so on.

   a. From the VIEW FUNCTION GROUP drop-down list, choose CHANNELS.
   b. Select the LEARN check box.
   c. Select CHANNEL BANK DOWN from the HOST COMMAND list.
   d. Press the button or key you want to use to switch to the next group of 8 tracks.
   e. Select CHANNEL BANK UP from the HOST COMMAND list.
   f. Press the button or key you want to use to switch to the previous group of 8 tracks.
8. Choose AUDIO CHANNELS from the VIEW FUNCTION GROUP drop-down list.
9. Program each knob:
   a. Verify that the LEARN checkbox is still selected.
   b. Select CHANNEL 1 FADER from the HOST COMMAND list.
   c. Turn knob 1 on your MIDI keyboard. You'll notice that the CHANNEL, MIDI MESSAGE, and MIDI DATA columns are updated.
   d. Repeat steps 9a and 9b to program knobs 2 through 8 on your keyboard.
10. Now, let's assign a button to toggle the controller in and out of automation mode so we can use the knobs to adjust the track's volume (trim) or record volume automation:
    a. From the VIEW FUNCTION GROUP drop-down list, choose ASSIGN.
    b. Select TOGGLE AUTOMATION MODE from the HOST COMMAND list.

c. Verify that the LEARN checkbox is still selected, and then press the button or key you want to use to switch your control surface in and out of automation mode.

   You'll notice that the CHANNEL, MIDI MESSAGE, and MIDI DATA columns are updated.

11. Click OK to close the CONFIGURE GENERIC CONTROL dialog, and then click OK to close the PREFERENCES dialog.

12. From the Options menu, choose EXTERNAL CONTROL to enable your controller.

    You're ready to start using your controller.

    - Turn each knob on your controller and notice that turning knob 1 adjusts the volume (trim) of track 1, turning knob 2 adjusts the volume of track 2, and so on.
    - Press the button that you assigned to scroll the channel bank down in step 7.

      Turn each knob on your controller and notice that turning knob 1 now adjusts the volume (trim) of track 9, turning knob 2 adjusts the volume of track 10, and so on.
    - Press the button that you assigned to scroll the channel bank up in step 7 so you can control tracks 1-8 again.
    - Press the button that you assigned to toggle automation mode in step 10.

      Select the AUTOMATION SETTINGS button on each track to enable automation recording.

      Start playback, and turn each knob on your controller, and notice that turning knob 1 records volume automation on track 1, turning knob 2 records automation on track 2, and so on.
    - Press the automation mode toggle button once more, and you can use the knobs to adjust track trim levels again.

Using a joystick for panning, adjusting controls, and color correction

You can use a joystick to adjust faders, surround panning, and the color wheel controls in the color corrector plug-ins.

If you're using a force-feedback joystick, force feedback adds a tactile element to your editing sessions.

The Joystick Profiles folder in the VEGAS Pro program folder contains .ini files to provide button mapping for several joysticks and instructions for creating or editing joystick mappings. These profiles are specific to each model of joystick. If only trigger functions are working for your joystick, a default profile is being used.

Follow your manufacturer's instructions for calibrating your joystick before using it with VEGAS Pro.

Using the Microsoft SideWinder Force Feedback 2 joystick

Jog dial (not shown)

Control	Function
Trigger	Enable joystick.
Stick	Move the control that has focus.
Hat (POV) switch	Move pan point to edges or corners of surround panner or Surround Panner window.
Button 2	Reset control to default for faders that take focus or Color Corrector color wheels. Centers track panning for stereo projects. Open/close Surround Panner window.
Button 3	Move to previous panning keyframe, Mixer control, or Color Corrector color wheel.
Button 4	Move to next panning keyframe, Mixer control, or Color Corrector color wheel.
Button 5	Hold button and adjust throttle control to adjust VOLUME fader in track list. Hold button and adjust throttle control to adjust bus VOLUME or assignable effect OUTPUT fader in the Mixing Console. Hold button and adjust throttle control to adjust CENTER fader in Surround Panner window.
Button 6	Hold button and adjust throttle control to adjust multipurpose fader in track list. Hold button and adjust throttle control to adjust assignable effect input fader in the Mixing Console. Hold button and adjust throttle control to adjust SMOOTHNESS slider in Surround Panner window.
Button 7	Move focus to previous track, Mixing Console channel strip, or color wheel.

Control	Function
Button 8	Move focus to next track, Mixing Console channel strip, or color wheel.
Throttle control	Combine with buttons 5, or 6 to adjust the selected control.

Using the LogitechWingman joystick

Control	Function
Trigger	Enable joystick.
Stick	Move the control that has focus.
Hat (POV) switch	Move pan point to edges or corners of surround panner or Surround Panner window.
Button 2	Move focus to previous track, Mixing Console channel strip, or Color Corrector color wheel.
Button 3	Move focus to next track, Mixing Console channel strip, or Color Corrector color wheel.
Button 4	Move to next panning keyframe, Mixing Console channel strip, or Color Corrector color wheel.
Button 5	Move to previous panning keyframe, Mixing Console channel strip, or Color Corrector color wheel.
Button 6	Reset control to default for faders that take focus or Color Corrector color wheels. Centers track panning for stereo projects. Open/close Surround Panner window.
Button 7	Hold button and adjust throttle control to adjust VOLUME fader in track list. Hold button and adjust throttle control to adjust bus VOLUME or assignable effect OUTPUT fader in the Mixing Console. Hold button and adjust throttle control to adjust CENTER fader in the Surround Panner window.
Throttle control	Combine with button 7 to adjust the selected control.

Using the Gravis Eliminator Precision Pro joystick

Control	Function
Trigger	Enable joystick.
Stick	Move the control that has focus.
Hat (POV) switch	Move pan point to edges or corners of surround panner or Surround Panner window.
Button 2	Change pan curve in Surround Panner window.
Button 3	Move focus to previous track, Mixing Console channel strip, or Color Corrector color wheel.
Button 4	Move focus to next track, Mixing Console channel strip, or Color Corrector color wheel.
Button 5	Reset control to default for faders that take focus or Color Corrector color wheels. Centers track panning for stereo projects. Open/close Surround Panner window.
Scroll wheel	Move to previous/next panning keyframe, Mixing Console channel strip, or Color Corrector color wheel.
Button 6 (Press scroll wheel)	Open/close Surround Panner window.
Button 7	Hold button and adjust throttle control to adjust VOLUME fader in the track list. Hold button and adjust throttle control to adjust bus VOLUME or assignable effect OUTPUT fader in the Mixing Console. Hold button and adjust throttle control to adjust CENTER fader in the Surround Panner window.

Control	Function
Button 8	Hold button and adjust throttle control to adjust multipurpose fader in track list. Hold button and adjust throttle control to adjust assignable effect INPUT fader in the Mixing Console. Hold button and adjust throttle control to adjust SMOOTHNESS slider in Surround Panner window.
Throttle control	Combine with button 7 or 8 to adjust the selected control.

Using a multimedia controller

VEGAS Pro supports several multimedia controllers that you can use for mouse-free editing and playback. Now you can increase your productivity and still have a free hand for your coffee mug.

This topic is intended to show you how the VEGAS Pro interface interacts with several multimedia controllers that we're familiar with and have tested. Other controllers may also work.

For specific information about your multimedia controller, please refer to the manufacturer's documentation.

Contour ShuttlePro default settings

Default setup

ShuttlePro .pref files are included with your VEGAS Pro installation. You can use these files to configure the Contour ShuttlePro or ShuttlePro v2 for use with VEGAS Pro.

> **TIP** If you have version 2.5 or later of the Shuttle Pro driver, you can use the driver's Export Settings Info feature to create a graphical representation of your current settings.

Contour ShuttleXpress default settings

ShuttleXpress .pref files are included with your VEGAS Pro installation. You can use these files to configure the Contour ShuttleXpress for use with VEGAS Pro.

> **TIP** If you have version 2.5 or later of the ShuttleXpress driver, you can use the driver's Export Settings Info feature to create a graphical representation of your current settings.

Navigating the timeline with a ShuttlePro or Shuttle Xpress

Use shuttle ring and jog dial to navigate the timeline. If you're using a ShuttlePro, you can also use the buttons in the top and bottom rows to navigate.

You can set the speed of the shuttle ring using the JKL / SHUTTLE SPEED drop-down list on the Editing tab of the Preferences dialog.

Navigating the timeline with a PowerMate or other controller

If you have a multimedia controller such as the Griffin Technology PowerMate, you can map your controller to the F3/F9 jog/edit keys.

Map the single-button function to the Enter key for Play/Pause functionality. When paused, the knob will jog by frame.

When you use the [or] keys to enter event edge-trimming mode, the knob will trim the event:

- Turn the knob left or right to trim the selected event edge.
- Hold Alt while turning the knob to perform a slip trim.
- Hold Ctrl while turning the knob to change the event's playback rate.
- Hold Ctrl+Alt while turning the knob to perform an adjacent trim.

During playback, the knob will function as a variable-speed shuttle control. You can set the speed of the shuttle control using the JKL / SHUTTLE SPEED drop-down list on the Editing tab of the Preferences dialog.

Editing events with a ShuttlePro or ShuttleXpress

You can use the second row of buttons and the jog dial to make the keyboard-based event edge-trimming method even better.

1. If you want downstream events to ripple as you trim, click the AUTO RIPPLE button to turn on Auto Ripple mode. For more information, see Post-edit ripple
2. Press the DESELECT ALL button on the ShuttlePro to deselect all events.
3. Select a track and position the edit cursor over the event you want to edit.
4. Press the SELECT EVENT START or SELECT EVENT END buttons and move to the edge you'd like to edit. A red bracket is displayed in the timeline to indicate which event edge will be trimmed.
5. Edit to your heart's content:
    - Turn the jog dial left or right to trim the selected event edge.
    - Hold Alt while turning the jog dial to perform a slip trim.
    - Hold Ctrl while turning the jog dial to change the event's playback rate.
    - Hold Ctrl+Alt while turning the jog dial to perform an adjacent trim.

Video Design and Optimization

Applying effects

You can use effects to manipulate the audio and video components of your project.

The included audio plug-ins can improve the quality of the audio in your project or create unique sounds. VEGAS® Pro supports additional DirectX and VST effects from a variety of vendors. Audio effects can be applied to all events on a track, to busses, or as assignable effects or to individual events.

The included video plug-ins are comprised of effects, transitions, and text/background generators. Effects can be used to improve video quality or manipulate an image, transitions can change the way video events flow into one another, and generators can create text and colored backgrounds.

> **TIP**
>
> - To add effects quickly, you can drag plug-ins and plug-in packages from the Plug-In Manager window to a track header. For more information, see Creating and using effects packages and FX chains and The Plug-In Manager Window
> - Use the VST Effects tab in the Preferences dialog to indicate where the application should search for VST plug-ins and to select which plug-ins you want to use.
>
>   For more information, see VST Effects Tab

FURTHER INFORMATION
Audio effects

- Adding effects to an audio track
- Adding effects to an audio event
- Adding effects to the master bus

- Adding effects to a bus
- Applying non-real-time event effects
- Using an assignable effects chain
- Automating audio effect parameters with envelopes
- Bypassing all audio effects
- Editing audio effects

Video effects

- Adding video effects to a video event, track, or media file
- Adding a transition between video events
- Adding generated media to your project
- Learning about compositing and masks
- Using keyframes to animate your effects
- Adding text with the Titles & Text plug-in
- Creating text and titles
- Panning and cropping video events
- Using video track motion

Audio and video effects

- Creating or applying an effects package
- Recording automation settings for track envelopes and keyframes

Video Effects

Adding video effects

There are several methods available for adding effects to video. Video plug-ins can be added to tracks, video events, source media files (via the Project Media window), or to the entire video project.

TIP

- To apply a preset without displaying the Video FX dialog, hold the Shift key while dragging a preset from the Video FX window to a track header, event, or the Video Preview window. For more information, see The Video FX Window
- To add effects quickly, you can drag plug-ins from the Plug-In Manager window to events, tracks, and the Video FX or Video Preview windows. For more information, see The Plug-In Manager Window
- To move faders and sliders in fine increments, hold Ctrl while dragging the control.
- Double-click the title bar of the Video FX window to resize it for the current plug-in.

Bypassing all video effects

You can use the SPLIT-SCREEN VIEW button in the Video Preview window to create a split-screen preview that bypasses all video effects (track effects, event effects, media effects, and video output effects) without removing them from your project.

For more information, see Split-screen previews

Adding video event effects

Video event effects are applied to individual events.

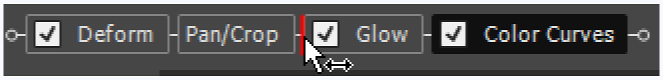
1. Click the EVENT FX button on the event in the timeline .

   If there are no effects added to the event, the Plug-In Chooser window appears.

If there are effects added to the event, the Video Event FX window appears in the window docking area. Click the PLUG-IN CHAIN button to open the Plug-In Chooser.

2. Select each plug-in you want to add and click the ADD button.
3. Click OK to close the Plug-In Chooser.

   The Video Event FX window appears.
4. Use the settings in the Video Event FX window to enable/bypass effects, edit effect parameters, and add/remove effects from a chain.

> **TIP**
>
> - To reorder the plug-ins within the chain, drag a plug-in button to a new location.
>
> 
>
>
> - You can also drag an effect from the Video FX window to the event on the timeline. For more information, see [The Video FX Window]
> - You can also double-click a preset in the Video FX window to apply the effect preset to the selected event.

Adding video track effects

Video track effects are applied to every event on the track.

1. Click the TRACK FX button in the track header. For more information, see [Video track controls]

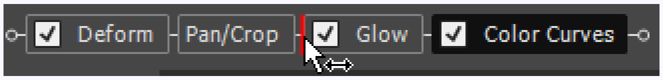
   If there are no effects added to the track, the Plug-In Chooser window appears.

   If there are effects added to the track, the Video Track FX window appears. Click the PLUG-IN CHAIN button to open the Plug-In Chooser.
2. Select each plug-in you want to add and click the ADD button.

3. Click OK to close the Plug-In Chooser.

   The Video Track FX window appears.

4. Use the settings in the Video Track FX window to enable/bypass effects, edit effect parameters, and add/remove effects from a chain.

> **TIP**
>
> - To reorder the plug-ins within the chain, drag a plug-in button to a new location.
>
> 
>
>
> - You can also drag an effect from the Video FX window to the track header in the track list. For more information, see [The Video FX Window]()
> - You can also double-click a preset in the Video FX window to apply the effect preset to the selected track (when no events are selected).

Adding video media effects

Video media effects are applied to every occurrence of the media file in your project. The source media file is not affected.

1. In the Project Media window, select a file and click the MEDIA FX button. For more information, see [Using the Project Media window]()

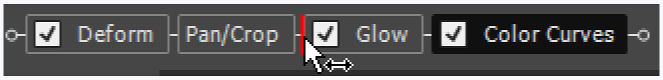
   If there are no effects applied to the file, the Plug-In Chooser window appears.

   If there are effects applied to the file, the Media FX window appears. Click the PLUG-IN CHAIN button to open the Plug-In Chooser.

> **TIP** You can access the Media FX also via the MORE … button of a video event, where you also can add a button for it in the event header. The Media FX button in the header also functions as an indicator, whether a Media FX is applied (fx) or not (fx).

2. Select each plug-in you want to add and click the ADD button.
3. Click OK to close the Plug-In Chooser.

   The Media FX window appears.
4. Use the settings in the Media FX window to enable/bypass effects, edit effect parameters, and add/remove effects from a chain.

> **TIP**
>
> To reorder the plug-ins within the chain, drag a plug-in button to a new location.
>
> 
>
>
> You can click the SAVE AS button in the Plug-In Chooser to create a filter package. A filter package allows you to quickly recall frequently used chains of effects. FX packages retain their chain order and individual plug-in settings.

Adding video output effects

Video output effects are applied to every video event in your project.

1. Click the VIDEO OUTPUT FX button fx in the Video Preview window. ⓘ For more information, see [Using the Video Preview window](#)

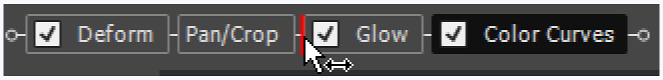
   If there are no effects applied to the project, the Plug-In Chooser window appears.

   If there are effects applied to the project, the Video Output FX window appears.

   Click the PLUG-IN CHAIN button fx to open the Plug-In Chooser.

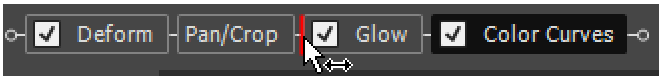
2. Select each plug-in you want to add and click the ADD button.
3. Click OK to close the Plug-In Chooser.

   The Video Output FX window appears.
4. Use the settings in the Video Output FX window to enable/bypass effects, edit effect parameters, and add/remove effects from a chain.

> **TIP**
>
> - To reorder the plug-ins within the chain, drag a plug-in button to a new location.
>
> 
>
>
> - You can also drag an effect from the Video FX window to the Video Preview window. For more information, see The Video FX Window

Editing existing video effects

1. Perform one of the following actions to display the editing window for the type of effect you want to modify:
   - Event effects: Click the EVENT FX button on the event in the timeline.
   - Track effects: Click the TRACK FX button in the track header.
   - Media effects: In the Project Media window, select a file and click the MEDIA FX button .
   - Video output effects: Click the VIDEO OUTPUT FX button in the Video Preview window.
2. Select an effect button at the top of the window.

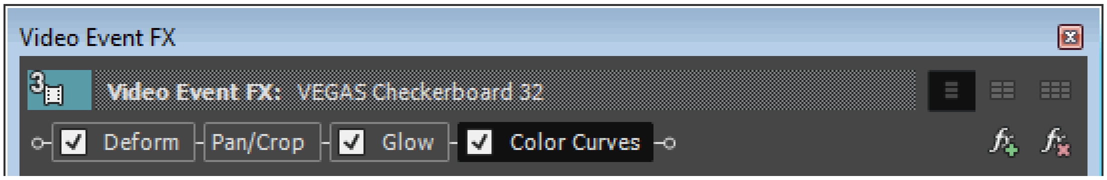


3. Use the controls in the bottom half of the dialog to adjust the effect's settings.

> **TIP** Click the REMOVE SELECTED PLUG-IN button to remove the current plug-in from the chain.

Applying video event effects before or after event panning or cropping

To prevent unwanted blurring, you can choose whether effects are applied to the event before or after any event panning and cropping by dragging the PAN/CROP button in the plug-in chain at the top of the Video Event FX window. For more information, see [Panning and Cropping Video Events]()

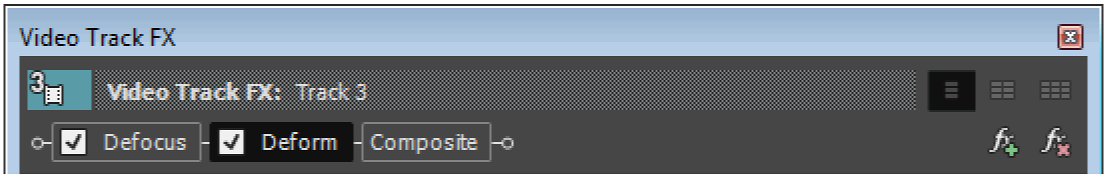

Video Event FX
Video Event FX: VEGAS Checkerboard 32
☑ Deform
Pan/Crop
☑ Glow
☑ Color Curves

Here, the Deform plug-in is applied before the pan/crop and the Glow and Color Curves plug-ins are applied after the pan/crop.

Applying video track effects before or after track compositing

When you add effects to a video track, you can specify whether the effects are applied before or after compositing. For more information, see [Compositing and masks]()

You can choose whether an effect is applied pre- or post-compositing by dragging the COMPOSITE button in the plug-in chain at the top of the Video FX window.


Video Track FX
Video Track FX: Track 3
☑ Defocus
☑ Deform
Composite

Animating a video effect

If you want to create an animated effect, use the keyframe controller at the bottom of the Video Event FX dialog to establish distinct settings throughout the duration of the effect.

During playback, intermediate frames are interpolated to create smooth motion.

Automating video output effect parameters with the bus track

You can think of VEGAS Pro as having a single video bus: when you have multiple tracks, they are all composited to a single video output.

When you choose VIDEO BUS TRACK from the View menu, a bus track is displayed for the video output. You can add keyframes to adjust effect parameters over time.

FURTHER INFORMATION
Keyframe animation

Compositing video

Video bus track

Using LUT’s to enhance video

LUT stands for Look Up Table, and is often referred to as a Color Look Up Table. LUTs are commonly used to add a specific color look to your video. Think of them as a universal color preset. LUTs are applied as an OFX plug-in and can be added, like other video effects, to tracks, video events, source media files (via the Project Media window), or to the entire video project using any of the methods described in this chapter. The one difference is that you will have to browse to the LUT, to select it, from the plugin window.

1. Open the Video effects window and expand the OFX folder
2. Drag the effect LUT Filter to the desired location (Media, Event, Track, Main output)
3. In the Video FX window, click the BROWSE button
4. Navigate to where you saved the LUT file, select the file, and click OPEN

5. Pick an Interpolation; LINEAR (GOOD) or TETRAHEDRAL (BEST)
6. Adjust the STRENGTH slider to achieve the look you prefer

> **NOTE**
>
> - Linear (good) intepolation is fast and reasonably accurate where as Tetrahedral is more accurate, but slightly slower.
> - The LUT filter produces an image that is a blend of the original image and the color-adjusted image. The Strength slider controls the mix, or the percentage of the color-adjusted image vs. the original image. A setting of 0 would be equal to no LUT being applied.

LUT Export

The LUT Export feature enables you to package any video effect chain into a .cube file (LUT file) that can then be imported and used in other effects chains within VEGAS Pro or any other software that imports and reads CUBE files.

To export an effect chain as a LUT, create a chain of effects at any of the four effects levels in VEGAS (Event, Track, Master Bus, Media). Once such a chain exists (using an event chain as an example), you have to:

1. Click the EVENT FX BUTTON in the event header to open the Video Event FX window (if it is not already open)
2. Deselect the check-box for any non-color-related plug-in to temporarily remove it from the chain (see note below)
3. Click the Plug-in Chain button to open the Plug-in Chain window
4. Click the Event SAVE LUT button
5. Choose a location and specify a file name for the LUT and save it.

> **NOTE** Keep in mind that a proper LUT can contain only plug-ins and filters that adjust things related to color such as hue, saturation, levels, and so on. A LUT cannot properly reproduce filters or effects that distort the image in some way, such as masking, blurs, shading, pixelation, compositing, and so on. You have to be highly aware of the plug-ins you allow to pass through the LUT export process. If you allow any non-supported plug-ins, the resulting LUT will be unpredictable, and very unlikely to represent what you think it will.

Managing Video FX Packages

In VEGAS Pro, you can combine multiple video effects into a reusable package called a **Video FX Package**. These packages preserve the full FX chain, including all parameter settings, and can be applied at any level:

- event
- track
- media
- video bus

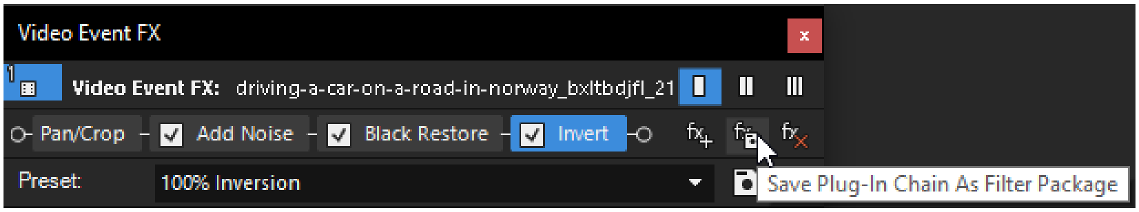
They simplify your workflow and ensure visual consistency across your projects or even multiple systems.

> **USE CASES**
> - Apply a saved effect chain to several clips without setting up the effects each time.
> - Build and reuse complex look presets across different scenes.
> - Share stylized effects setups with collaborators or across machines.

Creating a Video FX Package

» Make sure a video clip is placed on the timeline and the timeline cursor is positioned within the event.

1. Click the VIDEO FX button to open the window.
2. From the list of available effects, drag a preset of your choice onto the clip.
3. Add one or more additional effects to create a custom FX chain.
4. Adjust the parameter settings for each effect in the VIDEO EVENT FX window as needed.
5. When the FX chain is complete, click SAVE PLUG-IN CHAIN AS FILTER PACKAGE.


Video Event FX
Video Event FX: driving-a-car-on-a-road-in-norway_bxltbdjfl_21
Pan/Crop
Add Noise
Black Restore
Invert
Preset:
100% Inversion
Save Plug-In Chain As Filter Package

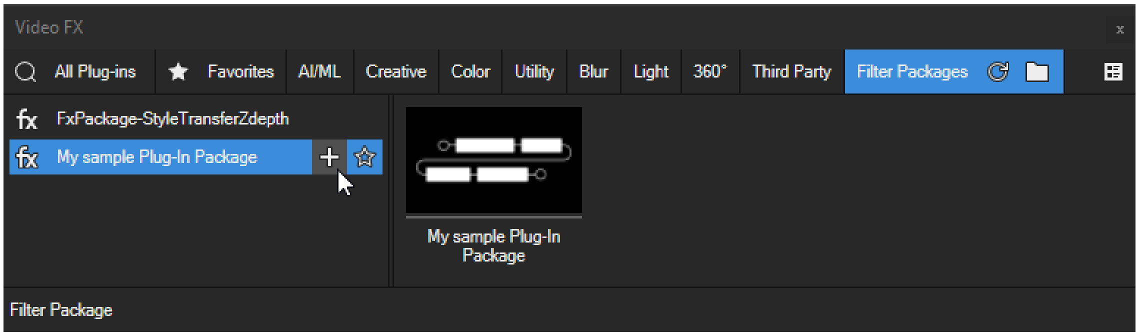
6. In the dialog that appears, enter a name for your FX package and click OK to save it.

   The full FX chain and all saved parameter settings will be restored.

> **NOTE**
> Using Packages at Other FX Levels
>
> You can apply video FX packages not only at the event level but also to tracks, media files, and the video bus:
>
> - **Track FX:** Open the TRACK FX window and drag the package in.
> - **Media FX:** Use the MEDIA FX panel for file-wide application.
> - **Video Bus FX:** Drag the package to the VIDEO BUS track.

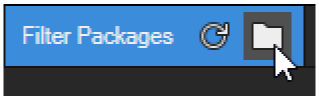
Applying a Saved FX Package

1. Drag a new clip onto the timeline.
2. Open the VIDEO FX panel and switch to the FILTER PACKAGES tab.
3. Drag the saved package onto the new clip or click the + button.


Video FX
All Plug-ins
Favorites
AI/ML
Creative
Color
Utility
Blur
Light
360°
Third Party
Filter Packages
FxPackage-StyleTransferZdepth
My sample Plug-In Package
My sample Plug-In Package
Filter Package

Managing and Sharing Packages

1. In the FILTER PACKAGES tab, click EXPLORE EFFECT FILTERS FOLDER.

   
   Filter Packages

   Windows Explorer opens to the folder where your FX packages are stored.
2. Copy these files to share them or transfer them to other computers.

> **IMPORTANT**
> Do not rename or modify FX package files manually outside VEGAS Pro. Use the interface to manage them.

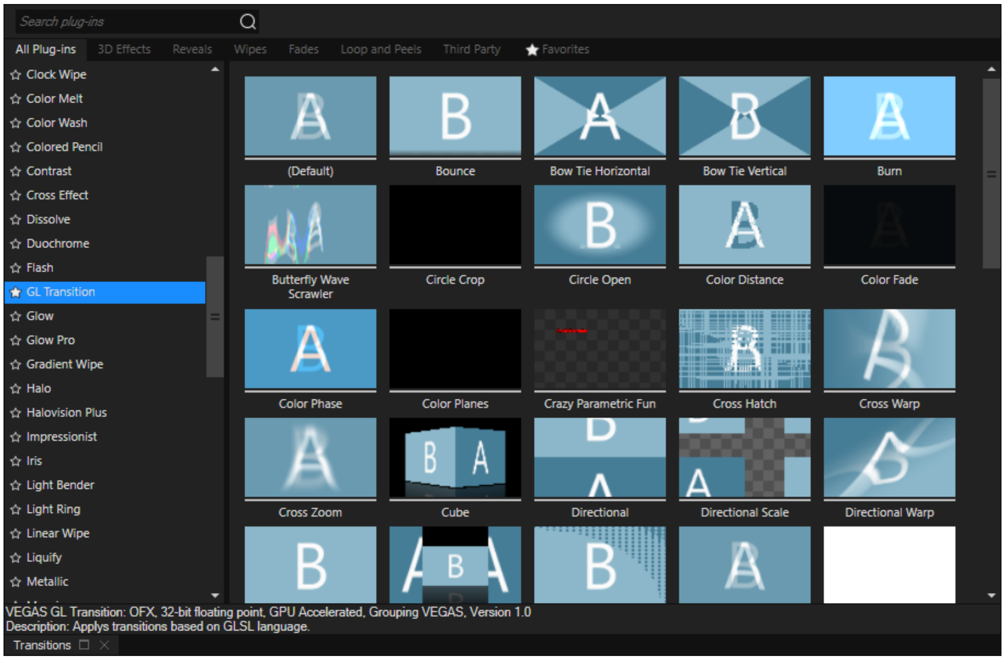
FURTHER INFORMATION

- Creating and using effects packages and FX chains

Transitions

Transitions are a fundamental aspect of video editing that help blend scenes seamlessly, convey a change in time or location, or add stylistic effects to your projects. VEGAS Pro offers a wide range of transition effects that can elevate your video projects.

- Blending scenes seamlessly to enhance storytelling.
- Indicating a change in time or location within the narrative.
- Adding visual interest and stylistic effects to videos.


Search plug-ins
All Plug-ins
3D Effects
Reveals
Wipes
Fades
Loop and Peels
Third Party
Favorites
Clock Wipe
Color Melt
Color Wash
Colored Pencil
Contrast
Cross Effect
Dissolve
Duochrome
Flash
GL Transition
Glow
Glow Pro
Gradient Wipe
Halo
Halovision Plus
Impressionist
Iris
Light Bender
Light Ring
Linear Wipe
Liquify
Metallic
(Default)
Bounce
Bow Tie Horizontal
Bow Tie Vertical
Burn
Butterfly Wave Scrawler
Circle Crop
Circle Open
Color Distance
Color Fade
Color Phase
Color Planes
Crazy Parametric Fun
Cross Hatch
Cross Warp
Cross Zoom
Cube
Directional
Directional Scale
Directional Warp
Transitions

VEGAS GL Transition: OFX, 32-bit floating point, GPU Accelerated, Grouping VEGAS, Version 1.0
Description: Applies transitions based on GLSL language.

Adding transitions

» Choose VIEW | WINDOW | TRANSITIONS to display or hide the Transitions window.

Use this window to choose and preview transition effects that you can use to control how a video event begins or ends, or to change the way one event flows into another.

At the top of the window you can see the available video effects organized into categories. In addition to categories such as FADES, WIPES or 3D EFFECTS, there are three special categories:

- ALL PLUG-INS: All available plug-ins are listed here.
- THIRD PARTY: Additionally installed third-party plug-ins are displayed here. If you select this category, an additional FILTER drop-down menu will appear in the upper right corner, where you can filter the third-party plug-ins by provider.
- FAVORITES: All plug-ins that you have marked as favorites are listed here. You mark a plug-in as a favorite by clicking on the little star in front of the plug-in name ☆.

The left pane lists each of the available transitions of the selected category. The thumbnail images in the right pane represent each of the existing presets for the selected effect. Hover your cursor over a preset to see an animated example.

Drag a transition preset to overlapping video events in the timeline to add a transition.

> **TIP**
>
> - You can type in the SEARCH PLUG-INS box to find plug-ins. For example, if you wanted to find a specific color-correction plug-in, you could type "color" in the box to display only plug-ins that include the term "color" in the plug-in name, description, or group name.
> - To apply a preset without displaying the VIDEO EVENT FX dialog, hold the Shift key while dragging a preset from the Transitions window to the timeline.
> - To move faders and sliders in fine increments, hold Ctrl while dragging the control.
> - Select EVENT FADE LENGTHS from the View menu to display fade lengths between selected and non-selected events in the timeline. You can use this display as a quick indicator of a transition's length.
> - Double-click the title bar of the Video FX window to resize it for the current plug-in.

Adding transitions to events

1. Choose VIEW | WINDOW | TRANSITIONS to display the Transitions window.
2. Select a transition from the list on the left side of the window. The thumbnail images on the right side of the window represent each of the existing presets for the selected transition. Point to a preset to see an animated example.
3. After you've found the preset you want to use, drag it to the position where you want it to occur on the timeline.

   You can drop the transition at either end of an event, between two overlapping events, or between two adjacent events.

The Video Event FX window is displayed to allow you to edit the transitions settings, and a TRANSITION PROPERTIES button is displayed in the timeline to show you where the transition takes place. You can also click this icon to edit the transition's settings.

Adding a transition to all selected events

If you tend to use the same transitions often, you can save yourself some time by adding a transition to all selected events.

1. Select the events where you want to add the transition.
2. Choose VIEW | WINDOW | TRANSITIONS to display the Transitions window.
3. Select a transition from the list on the left side of the window. The thumbnail images on the right side of the window represent each of the existing presets for the selected transition. Point to a preset to see an animated example.
4. After you've found the preset you want to use, drag it to one of the selected events.

   The new transition replaces all existing transitions in the selected events.

   The Video Event FX window is displayed to allow you to edit the transitions settings, and a TRANSITION PROPERTIES button is displayed in the timeline to show you where the transition takes place. You can also click this icon to edit the transition's settings.

Dropping on existing cuts, crossfades, or transitions

- If you drop the preset on an existing transition, only transitions within the selection will be changed. Cuts and crossfades are preserved.
- If you drop the preset on an existing crossfade, only crossfades and transitions within the selection will be changed. Cuts are preserved.
- If you drop the preset on an existing cut, all cuts, crossfades, and transitions within the selection will be changed.

Dropping on event edges

- If you drop the preset on a transition that is at the beginning or end of an event (but does not span two events), only single-event transitions that occur on the same end of the event within the selection will be changed.
- If you drop the preset on an event fade-in or -out, event fade-ins/outs and single-event transitions that occur on the same end of the event within the selection will be changed.
- If you drop the preset on an event edge with no fade, all other event edges, event fade-ins/outs, and single-event transitions that occur on the same end of the event within the selection will be changed.

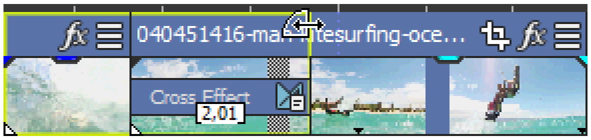
> **NOTE** To change the length of the transition for cuts that are converted to transitions, use the CUT-TO-OVERLAP CONVERSION settings on the Editing tab of the Preferences dialog. For more information, see [Editing Tab]

Changing the speed/duration of a transition

After you've added a transition to an event, you can easily adjust its duration, which will change the speed at which the transition occurs.

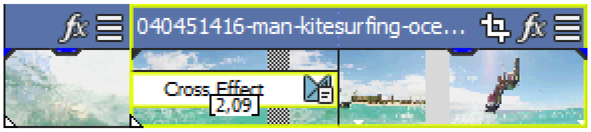
Adjusting a transition at the beginning or end of an event

1. Hover over the edge of the transition until the fade cursor is displayed.
2. Drag the edge of the transition to set its new length:

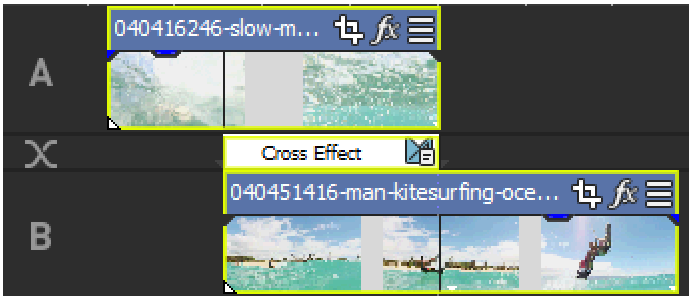


Adjusting a transition between two events

Drag either of the events to change the amount of overlap between them. The transition length is updated to match the overlapping area:


040451416-man-kitesurfing-oce…
Cross Effect
2,09

Right-click a track header and choose EXPAND TRACK LAYERS from the shortcut menu to reveal the A roll, B roll, and transition roll. In this view, sequential clips alternate between the A and B rolls, and the overlapping area between events is represented by the transition roll.


A
040416246-slow-m…
Cross Effect
B
040451416-man-kitesurfing-oce…

Editing a transition

Click the TRANSITION PROPERTIES button on a transition to change the transition's settings.

Changing to a different transition

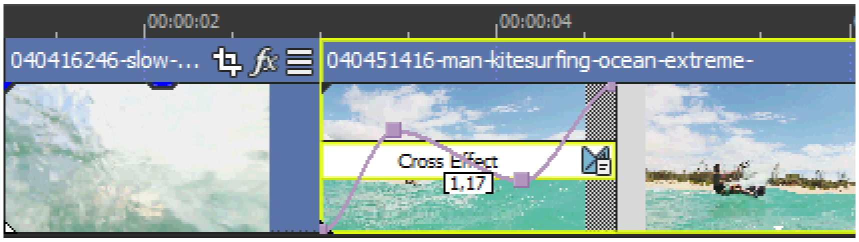
1. Click the TRANSITION PROPERTIES button on an event to display the Video Event FX window.
2. Drag a different transition from the Transitions window to the Video Event FX window.

Adding a transition progress envelope

Normally, a transition progresses from 0 to 100% in a linear fashion over the length of the transition. A transition progress envelope gives you complete control over a transition: you can hold, reverse, and repeat individual transitions.

1. Right-click a transition.
2. From the shortcut menu, choose INSERT/REMOVE ENVELOPE, and then choose TRANSITION PROGRESS from the submenu. An envelope is added to your transition.
3. Add points and adjust the fade curves as desired. For more information, see [Adjusting envelopes]()

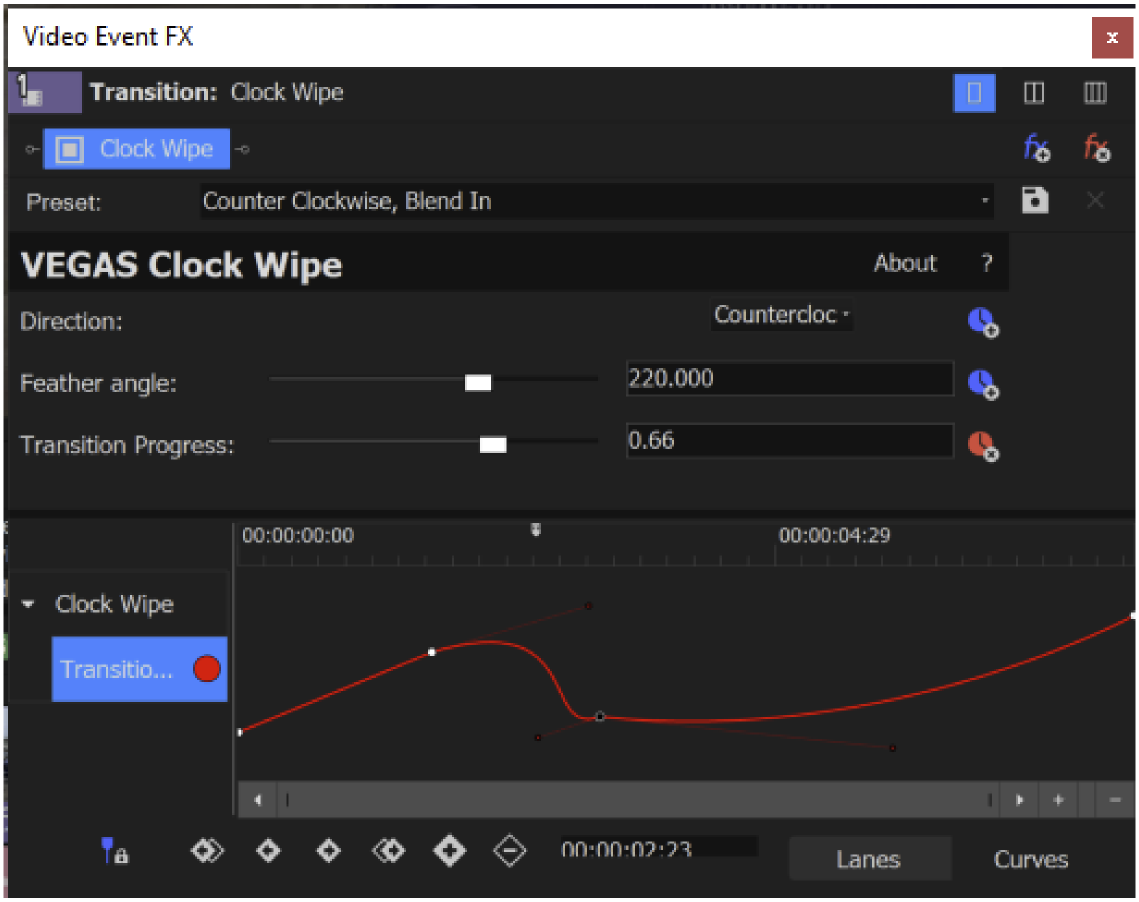
   In the following example, the transition starts, progresses to 50%, reverses direction, and then finishes.



Transition Progress with animation

new since VEGAS Pro 23

The Transition Progress envelope enables the user to control the rate of a transition over time and animate the progress so that it goes fast, slower, or even in reverse. This gives the user power to create custom transition behavior and includes Bèzier curve tools for complete control over the rate of change between animation points along the curve.



Video Event FX

Transition: Clock Wipe

Preset: Counter Clockwise, Blend In

VEGAS Clock Wipe

Direction: Countercloc

Feather angle: 220.000

Transition Progress: 0.66

1. Add two video clips to the same track in your timeline and overlap them to create a crossfade.
2. Make the overlap at least a second long so that you can see the results more clearly.
3. In the Window Docking area, click the TRANSITIONS tab.
4. Drag a transition onto the crossfade area. Something simple like a Clock Wipe or Linear Wipe works well for experimentation.
5. In the timeline, click the transition's TRANSITION PROPERTIES button.
6. In the VIDEO EVENT FX window, click the TRANSITION PROGRESS button. This opens the keyframe timeline for the transition.
7. Click the CURVES button to enter curve editing mode.
8. Double-click the envelope line to add a point.

9. Drag the point to a new position around .60, or use the TRANSITION PROGRESS slider to adjust the point.
10. Add another point to the envelope line. Set this point to a value of 0.00.
11. To set the curve type for the curve after a point, right-click the point and choose the curve shape you want. If you select one of the Bèzier curve types, adjust the curve handles until you achieve the shape you want.
12. When you're done, click in your timeline to place the cursor before your transition and play your project.

    You'll see the transition start, speed up, reverse, and finally finish. You can add as many points to the envelope as you want to.

Removing a transition

1. Click the TRANSITION PROPERTIES button on an event to display the Video Event FX window.
2. Click the REMOVE SELECTED PLUG-IN button to remove the current transition.

Converting a cut to a transition

When you have two video events that are inserted back-to-back with no transition (referred to as a cut), you can convert the cut to a transition by dragging a transition from the Transitions window and dropping it between the events.

You can also right-click between the two events, choose TRANSITION from the shortcut menu, and choose a crossfade or transition type from the submenu.

One or both of the events will be extended so they overlap, allowing room for the transition. Use the ALIGNMENT drop-down list under the CUT-TO-OVERLAP CONVERSION heading on the Editing tab of the Preferences dialog to determine where the transition is placed. For more information, see Editing Tab

> **NOTE** There must be sufficient media on each side of the cut to accommodate the overlap time specified on the Editing tab of the Preferences dialog.

Converting a crossfade or transition to a cut

1. Click to position the cursor within the transition.
2. Hold Ctrl while pressing the / key on your numeric keypad.

   The transition is converted to a cut, using the CUT-TO-OVERLAP CONVERSION settings on the Editing tab of the Preferences dialog to determine where the cut occurs. For more information, see Editing Tab

Adding generated media to your project

Media generators can be used to create backgrounds, text, and textures in your project.

> **TIP** Double-click the title bar of the Video Media Generators window to resize it for the current plug-in.

Adding a generated media event

1. Position the cursor where you want to create the event.
2. Select the media generator you want to use:
   - Select a generator in the left pane of the Media Generators window. The thumbnail images in the right pane represent each of the existing presets for the selected generator. Hover your mouse pointer over a preset to see an animated example, and drag the preset you want to use to the timeline.

     For more information, see The Media Generators Window
   - From the Insert menu, choose GENERATEDMEDIA. The Plug-In Chooser is displayed. Select the plug-in you want to use and click OK.
3. > **TIP** You can double-click a preset to add it to the selected track.

   The Video Media Generators dialog is displayed.

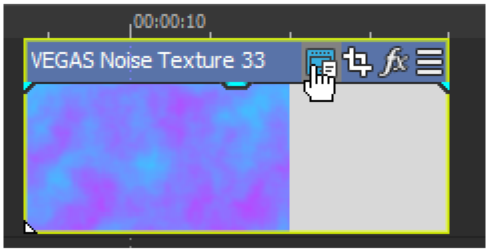
4. In the Video Media Generators dialog, type values in the FRAME SIZE and LENGTH boxes to specify the size and duration of the generated media.
5. Use the controls in the Video Media Generators dialog to adjust the plug-in's settings.

   For more information, see The Media Generators Window

> **TIP** To create a generated media event quickly, drag a preset thumbnail from the Media Generators window to the timeline. A new event is created where you drop the thumbnail using the preset's parameters.

Editing a generated media event

1. Click the GENERATED MEDIA button on an event. The Video Media Generators dialog is displayed.



2. Use the controls in the Video Media Generators dialog to adjust the plug-in's settings.
   - Click the MATCH EVENT LENGTH button to set the length of the generated media to match the length of the event.
   - Click the MEDIA PROPERTIES button to edit information about the generated media, such as the frame size, frame rate, field order, pixel aspect, and rotation.

     For more information, see Viewing or changing media file properties

- Click the REPLACE PLUG-IN button fx to change the media generator for the current event.
- Use the lower portion of the Video Media Generators dialog to choose a new preset or adjust the plug-in's settings.

Copying a generated media event

You can duplicate generated media events using copy and paste commands, by holding Ctrl while dragging an event to a new position on the timeline, or by dragging generated media from the Project Media window to the timeline.

When you duplicate a generated media event, a dialog is displayed with two options:

- Create a new copy of the source media:

  The new event is created using the same settings as the original event. Each event can be edited independently.

- Create a reference to the original media:

  The new event uses the same source media as the original generated media event. Any change to either event affects both events.

Removing generated media

To remove generated media from your project, select the event and press Delete.

Animating a generated media event with keyframes

If you want to create an animated effect, use the keyframe controller at the bottom of the Video Media Generators dialog to establish distinct settings throughout the duration of the effect.

During playback, intermediate frames are interpolated to create smooth motion.

For more information, see Keyframe animation

Creating text and titles

Most video projects include titles and credits. There are several ways to add text to your project: you can use the included plug-ins for static text and scrolling credits, or you can use an external image-editing program to create images with text on them.

Adding text with the Titles & Text plug-in

1. Choose VIEW | WINDOW | MEDIA GENERATORS to display the Media Generators window.
2. In the left pane, select the Titles & Text plug-in. The available presets are displayed in the right pane.
3. Drag a preset to a position on the timeline to create a generated media event.

   > **TIP** If you want text to appear as an overlay, add it to a track above the video you want to overlay and use a transparent background. For more information, see [Compositing and masks]()

4. Use the Titles & Text plug-in controls to edit the appearance of your text. For more information, see [Using the Titles & Text Plug-In]()

Transfer Text Properties

new since VEGAS Pro 23

In the TITLES & TEXT MEDIA GENERATOR, you can easily transfer text properties from one event to another. It simplifies the process of achieving consistent text attributes across multiple text events within the same track.

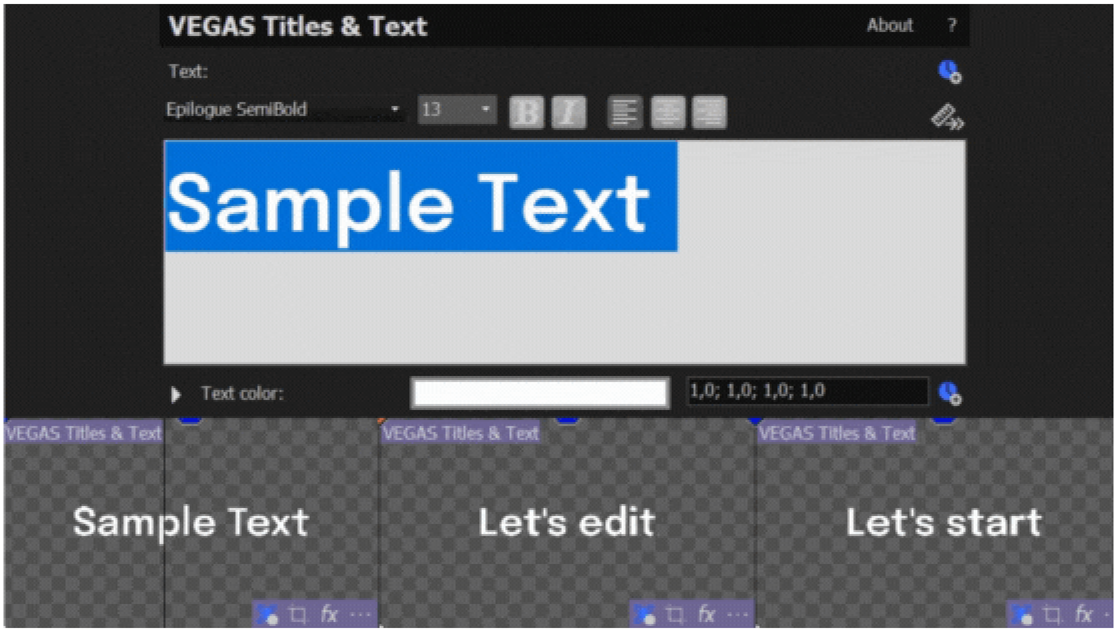
> **EXAMPLE** If you have dozens of lower third text events in your project and decide to use a different color, font, size, and/or other characteristic for all of them, you only need to change the characteristics for one of the events and then can instantly apply the change or changes to all of the rest of them.

1. Click the MEDIA GENERATORS tab to bring that window to the front.
2. Select TITLES & TEXT from the list of generators.
3. Add several text events to the same track in your timeline.
4. Type something different as the text in each one (even if just Text Event 1, Text Event 2, and so on).
5. Customize the properties of each text event.

   For example, you can use different colors, fonts, sizes, bold or italic styles, etc.

   Transferring text properties:

6. If the "Video Media Generator" window is not open for any of the events, select one of the events on the track.
7. Click the "Generated Media" button for that event to open the "Video Media Generator" window.
8. In this window, you will find the "Transferring Text Properties" function.
9. By clicking this function, all the other "Titles & Text" events on the same track will be instantly updated to match the properties of the control event.


VEGAS Titles & Text
About
?
Text:
Epilogue SemiBold
13
B
I
Sample Text
Text color:
1,0; 1,0; 1,0; 1,0
VEGAS Titles & Text
Sample Text
VEGAS Titles & Text
Let's edit
VEGAS Titles & Text
Let's start

Verifying the changes:

Click on the other events in the track and observe that the text size, font, animation, and other attributes have been updated to match the control event.

> **NOTE** This action does not change the text content of the events.

Reverting the changes

If you’re not happy with the change you made, click the Undo button and all events revert to their original characteristics.

Adding text and titles with the ProType Titler

> **NOTE** The Pro-Type Titler is deprecated and hidden by default.

With the ProType Titler, you can create static text, animated text effects with splined paths, per-character animation, and advanced curves. Add shadows, glows, blurs, and gradients for unique text treatments.

1. Choose VIEW | WINDOW | MEDIA GENERATORS to display the Media Generators window.
2. In the left pane, select the ProType Titler plug-in. The available presets are displayed in the right pane.
3. Drag a preset to a position on the timeline to create a generated media event.

   > **TIP** If you want text to appear as an overlay, add it to a track above the video you want to overlay and use a transparent background. ⓘ For more information, see see Compositing and masks

4. Use the Pro Type Titler plug-in controls to edit the appearance of your text.

   You can use animation in the ProType Titler to create scrolling and crawling credits.

   ⓘ For more information, see Using the ProType Titler.

Creating a title from a graphic

Title images can be created in almost any editing program. The following general procedure explains how to create titles with a transparent background.

> **TIP** You can use track motion to animate titles created from still images. For more information, see Editing track motion

1. Start your image-editing application.
2. Create a new image and set the dimensions of the new image to be the same as the frame size for the project.
3. Make the default canvas (background) transparent.
4. Select the Text tool and type the text for your title.

   > **NOTE** Size and position your titles carefully to fit within the Title Safe Area, or the titles may extend beyond the edges of your television. For more information, see Using the Video Preview window

5. Save the file as a PNG, PSD, or TGA file (PNG is recommended). Make sure that you save the alpha channel information, which will be used for transparency.
6. Add the image as an event to the track above the track containing the background.
7. Click the COMPOSITING MODE button to set the title track to SOURCE ALPHA (default).

NOTE

- If your title is saved as a TGA image, the alpha channel may not be detected automatically. Use the Media Properties dialog and choose a new setting from the ALPHA CHANNEL drop-down list. For more information, see Viewing or changing media file properties
- If your image does not have an alpha channel, you can apply the Chroma Keyer filter to the image to key out the background.

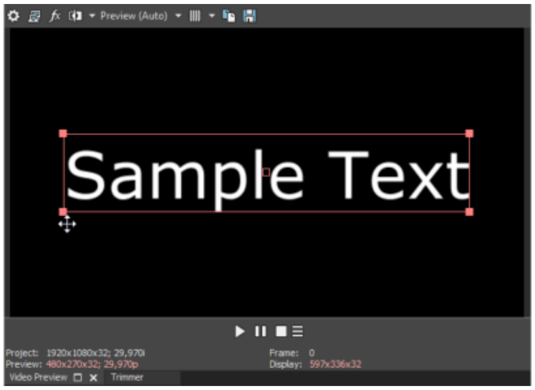
Using the Titles & Text Plug-In

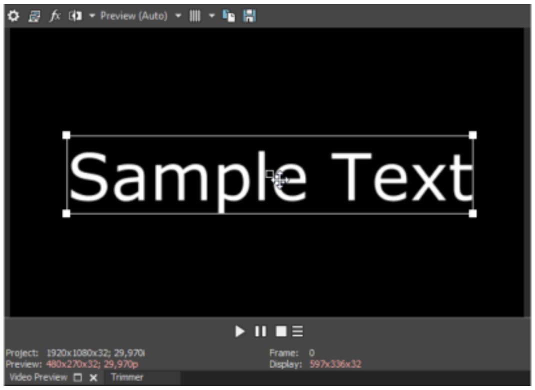
When you add the Titles & Text plug-in to your project, the Video Media Generators dialog is displayed.Use the controls in the Video Media Generators dialog to control the appearance of your text.

TIP

You can use keyframe animation to animate any of the plug-in's controls using keyframes.Click a control's ANIMATE button to create keyframes at the bottom of the Video Media Generators window.

For more information, see Keyframe animation

Item	Description
Text	Type your text in the text box. The controls above the text box allow you to set the typeface, font size, bold or italic properties, and justification for the selected text. **TIP** Right-click the text box to display a shortcut menu with CUT, COPY, PASTE, DELETE, and SELECT ALL commands.
Text Color	Click the arrow ▶ to show or hide the text color controls. You can use the color picker, type color values (or names), or use the eyedropper to sample a color from your screen.
Animation	Choose a setting from the drop-down list to apply animation effects to your text.
Scale	Drag the slider to adjust the size of your text. A setting of 1 applies no scaling; drag to the right to enlarge the text, or drag left to shrink the text. When your text event is selected in the timeline, you can drag the corners of the text box in the Video Preview window to scale it:  Project: 1920x1080x32; 29,970i Preview: 480x270x32; 29,970p Frame: 0 Display: 597x336x32

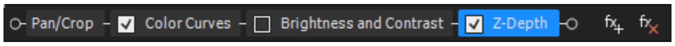
Item	Description
Location	Click the arrow ▶ to show or hide the text location controls. Perform any of the following actions to position the text within your project's video frame: - Drag the point in the position box: - Type coordinates in the position box. 0,50; 0,50 0.00, 0.00 represents the lower-left corner of the frame, 0.50, 0.50 represents the center, and 1.00, 1.00 represents the upper-right corner. - When your text event is selected in the timeline, you can drag the text box in the Video Preview window to position it:  Project: 1920x1080x32; 29,970i Preview: 480x270x32; 29,970p Frame: 0 Display: 597x336x32
Anchor point	Choose a setting from the drop-down list to set the anchor point of the text box.Text scales relative to the anchor point, which does not move.The anchor point is identified by an empty square in the Video Preview window.

Item	Description
Advanced	Click the arrow ▶ to show or hide the advanced controls for background color, tracking, and line spacing.
Background	Click the arrow ▶ to show or hide the background color controls. You can use the color picker, type color values (or names), or use the eyedropper to sample a color from your screen.
Tracking	Drag the slider to adjust the amount of spacing between text characters.
Line Spacing	Drag the slider to adjust the amount of spacing between lines of text.
Outline	Click the arrow ▶ to show or hide the controls for outlining text.
Outline Width	Drag the slider to specify the width of the outline.
Outline Color	Click the arrow ▶ to show or hide the outline color controls. You can use the color picker, type color values, or use the eyedropper to sample a color from your screen.
Shadow	Click the arrow to show or hide the controls for adding a shadow behind your text.
Shadow Enable	Select the checkbox to display a shadow behind your text.

Item	Description
Shadow Color	Click the arrow ▶ to show or hide the shadow color controls. You can use the color picker, type color values (or names), or use the eyedropper to sample a color from your screen.
Shadow Offset X	Drag the slider if you want to offset the shadow from the horizontal center of your text.
Shadow Offset Y	Drag the slider if you want to offset the shadow from the vertical center of your text.
Shadow Blur	Drag the slider to determine how smoothly the text shadow blends into the background.

Creating and using effects packages and FX chains

Creating and using effect packages and effect chains in VEGAS Pro allows you to streamline your video editing process and enhance creativity. An effects package allows you to quickly recall frequently used chains of effects, retaining their chain order and individual plug-in settings. Effect chains are sequences of effects applied in a specific order to achieve desired visual results. You can save and reuse your favorite editing styles by creating custom effect chains, empowering you to efficiently apply your preferred combinations to different media within your projects.



NOTE For creating reusable video FX chains and sharing them between systems, see [Managing Video FX Packages](#).

Creating a FX chain

1. Click the PLUG-IN CHAIN button fx on the Track FX, Bus FX, or Assignable FX dialog to display the Plug-In Chooser window.
2. Select each plug-in you want to add and click the ADD button.

   The plug-ins appear at the top of the window in the order in which you added them.

   > **TIP** To reorder the plug-ins within the chain, simply drag a plug-in button to a new location.
3. Click the OK button.

   The Track FX window appears.
4. Use the settings in the Track FX window to enable/bypass effects, edit effect parameters, and add/remove effects from a chain.

Editing a FX chain

1. Click the TRACK FX button fx in the track header.

   The Track FX window appears.
2. Select an effect button at the top of the window.

   > **TIP** Clear the checkbox to bypass an effect without removing it from the chain.
3. Use the controls in the bottom half of the window to adjust the effect's settings.

Adding or replacing plug-ins in an FX chain

Add or replace plug-ins in an existing FX chain to enhance your audio or video effects. You have the flexibility to either add a new effect to the existing chain or replace the entire chain with a new plug-in or filter package.

1. Open the PLUG-IN CHOOSER.

   If you have a chain of effects on a video event, click the event's Event FX button.
2. In the Video Event dialog, click the Plug-in Chain button.

   In the Plug-In Chooser, you will see your current FX chain displayed at the top.
3. Select a new plug-in or filter package from the list. Ensure that you have created the desired item beforehand.
4. Add or replace the existing FX Chain.
   - To add the selected item to the end of your current FX chain, click the ADD button.
   - If you want to replace the entire chain with the selected item, click the REPLACE button.
5. Click OK to confirm the changes.

Saving an FX chain as a preset

1. Click the PLUG-IN CHAIN button fx on the Track FX, Bus FX, or Assignable FX dialog to display the Plug-In Chooser window.
2. Use the Plug-In Chooser to add, remove, or arrange plug-ins.
3. Click the SAVE AS button.
4. Enter a name on the Save Plug-In Package dialog and click OK.

Using an FX chain preset

1. Click the PLUG-IN CHAIN button fx on the Track FX, Bus FX, or Assignable FX dialog to display the Plug-In Chooser window.
2. In the Plug-In Chooser, browse to the preset package you want to recall.
3. Click OK to load the effects and settings from the package.

Exploring Video plug-ins

The video plug-ins that are installed on your system will vary depending on the version of the software that you are using.

360 Effects

Tiny Planet

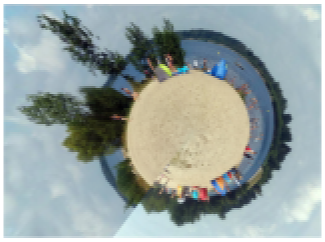
With the Tiny Planet effect you distort a picture or video into a circular form. The x-coordinate of each pixel is transformed into the angle, the y-coordinate into a radial distance. The result is a sphere that looks like a little planet photographed from above using a fisheye lens.

The results you achieve with this effect strongly depend on the source image or video, so consider some rules:

- To achieve a seamless sphere the left and right borders should match as perfectly as possible. The ideal source would be a 360° video or panorama picture but you can achieve interesting effects on any video or image. With more narrow angles you might have to do some retouching to match textures and colors at the borders.
- The upper area of the picture will be heavily distorted, so so try not to have important material there. A clear blue sky works best.
- The same holds for the bottom, it will be squashed into a tiny area, so make sure there is a simple texture like a flat color, sand, or water.
- A straight horizon enables the picture edges to meet perfectly.
- Good source images are therefore: mountains, beaches, city skylines, city squares

> **IMPORTANT** Panorama pictures usually are much wider than high. If you load them into a project with the usual 16:9 aspect ratio, black bars are added at the top and bottom of the picture which are included in the effect, resulting in a black hole in the middle of the planet and a perfectly circular black space around it. If you don't want this, right click the event and choose PROPERTIES. Deactivate MAINTAIN ASPECT RATIO to force the picture into the project aspect ratio, avoiding the black bars.

Original panorama photo



Tiny Planet from the photo

Item	Description
LATITUDE	This value defines the position of the floor in the picture. Experiment with it. For pictures with non-matching borders, if you change it you get a different perspective on the planet, not straight from above any more. In combination with the Z value you can avoid displaying these areas. A value of 180° gives you a "hollow earth" perspective.
LONGITUDE	This defines the angle of the left border of the image, in other words, which part of the picture should point up. You can also use this in combination with an envelope to rotate your tiny planet.
Z	Zoom value, controls the distance of your planet from the viewer.

Blur Effects

Defocus

Item	Description
Radius	Controls the amount of defocusing. Higher values result in more defocusing.
Iris shape	Determines the shape of the blooms when the image is defocused.
snapping	Spins the iris shape through a 360-degree cycle. Higher values result in clockwise rotation.
Disc curvature	Adjusts the shape and intensity of the interior section of the blooms. Higher values result in more intense centers.
Bloom threshold	Controls the level at which blooms occur on light sources. Higher values result in fewer light sources blooming.
Bloom strength	Controls the intensity of the blooms. Higher values result in more intense blooms.
Reduce flicker	Toggles prefiltering of the source material to reduce unwanted flickering in the output.

Gaussian Blur

This alters the apparent focus of the video, blurring and softening the appearance. It can also be used to smooth out some types of noise and can also be used as a corrective filter.

Original

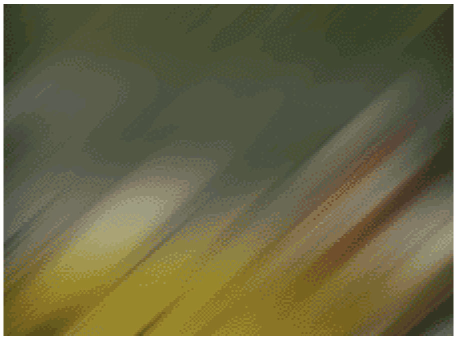
Gaussian Blur

Item	Description
HORIZONTAL RANGE VERTICAL RANGE	Drag the sliders or type values in the edit boxes to determine how many pixels in a block are blended together.
CHANNELS	Click the arrow ▶ to show or hide the channel controls. Select the specific color channels red, green, blue, or alpha that you want to blur. If the video or image has an alpha channel, basing the blur on that channel can sometimes improve transparency and mask blending.

Linear Blur

Use the Linear Blur effect to blur your video along a specified angle.

Original



45-degree blur

Item	Description
ANGLE	Drag the slider (or enter a value in the edit box) to set the angle of the blur.
RATIO	Drag the slider (or enter a value in the edit box) to set the amount of blurring that will be applied. A setting of 0 produces no blur, and 1 is the maximum blur.

Quick Blur

Use the Quick Blur filter to reduce the sharpness of the video. This filter is a fast convolution blur, therefore, the effect is subtle. If you want to apply a more substantial blur use the Gaussian Blur filter.

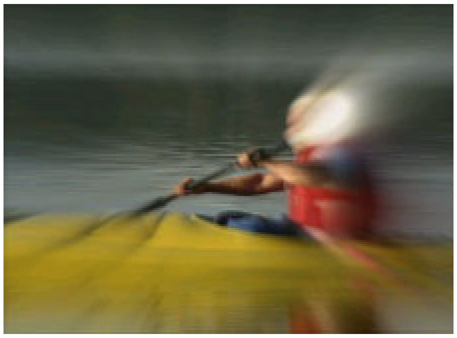
Original

Quick Blur

Radial Blur

Use the Light Rays effect to simulate rays from a light source shining on an image.

Original



Strong Proportional Blur

Item	Description
CENTER	Click the arrow ▶ to show or hide the center controls. Perform one of the following actions to set the center of the blur effect: - Drag the point in the position box: ⌖ - Type coordinates in the position box. 0.00, 0.00 represents the lower-left corner of the frame, 0.50, 0.50 represents the center, and 1.00, 1.00 represents the upper-right corner. 0,50; 0,50
TYPE	Select a radio button to set type of blur: - A proportional blur increases proportionally from the origin of the blur outward. - A fixed-radius blur applies the same blur throughout the image. - A Gaussian blur applies a smooth Gaussian blur.
LEVEL	Drag the slider (or enter a value in the edit box) to set the amount of blurring that will be applied. A setting of 0 produces no blur, and 1 is the maximum blur.

Sharpen

Sharpen finds and emphasizes areas of contrast in the image, increasing the video's crispness. This filter applies the opposite effect of the Blur and Median filters.

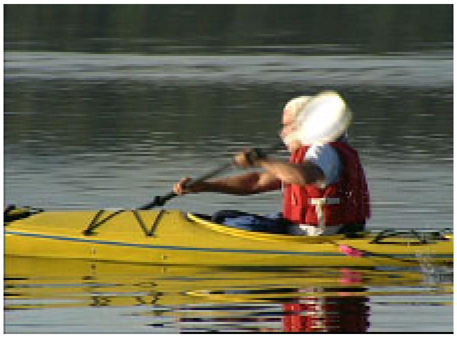
Original

Sharpen Effect

Unsharp Mask

Unlike the name suggests, you can use this effect to sharpen the image.

Original



Hard

Item	Description
RATIO	Drag the slider or enter a value in the box to specify the amount by which you want to adjust the sharpness of edges in your image.
RADIUS	Drag the slider or enter a value in the box to specify how many pixels surrounding the sharpened edge are affected during sharpening.
THRESHOLD	Drag the slider or enter a value in the box to specify how the filter determines edges: a setting of 0 will sharpen all pixels.

Color Effects

Black and white

This filter removes all color information from an image without altering the luminosity. This converts a video to gray scale or black and white. This can be an important filter when used in combination with other filters. For example, removing the color makes creating a grayscale mask a more predictable process.

Drag the BLEND AMOUNT slider to the right to desaturate the color in your video.

Original

Black and White

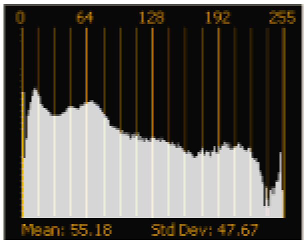
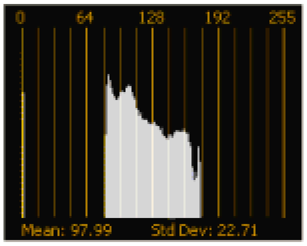
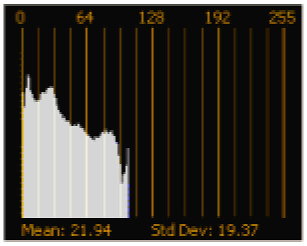
Brightness and Contrast

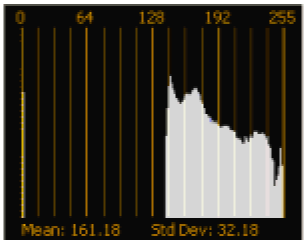
Use the Brightness and Contrast filter to improve video that has exposure problems.

Original

Brightness and Contrast

Item	Description
BRIGHTNESS	Adjusting brightness adds or subtracts values from the color channels in an image to make the image lighter or darker: ● Drag the slider to the right to increase brightness. The maximum brightness setting adds 255 (pure white). ● Drag the slider to the left to decrease brightness. The minimum setting adds 0 (pure black).
CONTRAST	Contrast is defined as the absolute difference between the darkest and lightest areas of an image or video. Adjusting contrast multiplies color values in an image to distribute the existing color channel values across a broader or narrower portion of the spectrum: ● Drag the slider to the right to increase the difference between the darkest and lightest areas. ● Drag the slider to the left to decrease the difference between the darkest and lightest areas.

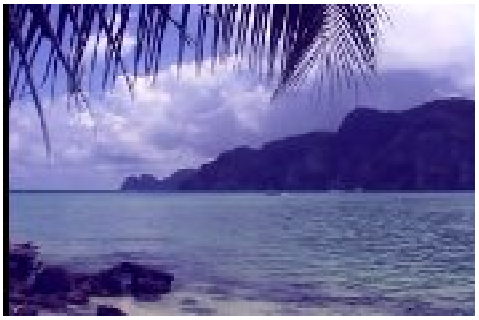
Item	Description
CONTRAST CENTER	Drag the slider to determine the anchor point for distributing color values.  Histogram of original image  Contrast decreased with a contrast center of 0.5: the histogram is squeezed into a narrower portion of the spectrum anchored from the center of the graph.  Contrast decreased with a contrast center of 0.0: the histogram is squeezed into a narrower portion of the spectrum anchored at the left edge of the graph.

Item	Description
	 Contrast decreased with a contrast center of 1.0: the histogram is squeezed into a narrower portion of the spectrum anchored at the right edge of the graph.

Color balance

Use Color Balance to alter the RGB values (Red, Green, Blue) in a video clip. You can also specify which areas you want the RGB values to affect more intensely (Highlights, Midtones, or Shadows).

Original

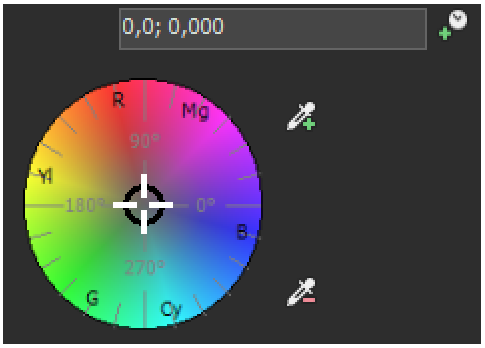


RGB values changed

Item	Description
RED/GREEN/BLUE VALUES	Increases or decreases the given color in the video. Use the slider or enter a number in the text box to adjust each color value.
HIGHLIGHTS	Applies the color change more intensely to the brighter areas of the video.
MID TONES	Applies the color change more intensely to the mid range of color intensities of the video.
SHADOW	Applies the color change more intensely to the darker areas of the video.
PRESERVE LUMINOSITY	Preserves the overall brightness of the image or video when the RGB color values are changed

Color Correction

The Color Corrector plug-in helps you adjust colors in your video by independently adjusting the color of low, middle, and high color tones.



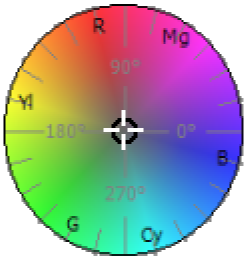
The point's angle determines the hue you are adding, and the distance from the center determines the magnitude, or saturation of that hue.

1. Position your cursor on the frame you want to adjust in the Vegas timeline.

   > **TIP** Working with the Scopes window open will help you monitor your progress.

2. Click the arrow ▶ to show or hide the color wheel for the color range to be adjusted (Low, Medium, High):
   - Drag the point in the center of the color wheel to pick a hue and saturation.
   - Enter appropriate values in the format (angle, magnitude) into the edit box to define a hue and saturation.
   - Use the complementary color eyedropper tool and sample a color on your screen to add the sampled color's complement. For example, if the blacks in your video contain a blue cast, you use the complementary color eyedropper from the Low color wheel to sample a black portion of your video. Adding blue's complement will rebalance your blacks.

     Complementary colors are colors that are 180 degrees apart on the color wheel. In the following image, you can see that red and cyan are complementary colors, as are magenta and green, and blue and yellow.

   - Use the adjustment color eyedropper tool to sample a color on your screen to choose the color you want to add.
3. Drag the SATURATION slider to adjust the video's overall saturation.
4. Drag the GAMMA slider to adjust the overall brightness of the video. 1 is the default setting; higher settings produce a brighter image, and lower settings produce a darker image.

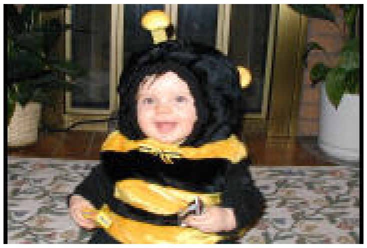
5. Drag the GAIN slider to add a gain to all luminance values in the video. All luminance values are multiplied by the GAIN setting.
6. Drag the OFFSET slider to offset all luminance values in the video.

Color Corrector (Secondary)

The Color Corrector (Secondary) plug-in helps you perform fine color correction by adjusting a single color independently of the other colors in your video.

> **TIP** Stack multiple instances of the plug-in for advanced color control.

To demonstrate how you can use the plug-in, we'll adjust the color of this bumblebee's stripes:



Choose the color you want to adjust

The plug-in works by allowing you to adjust a selected color. If you don't select a color, the plug-in will affect all colors in your video.

1. Position your cursor on the frame you want to adjust in the Vegas timeline.

   > **TIP** Working with the Scopes window open will help you monitor your progress.

2. Click the EFFECTS AREA button to activate the eyedropper 🖉.

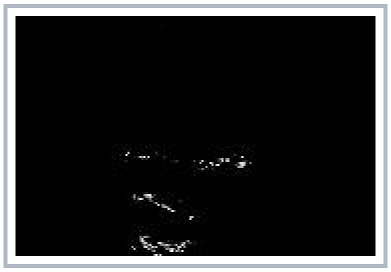
   > **TIP** Drag to create a rectangular selection to select a range of color.

3. Click a portion of the image in the Vegas Video Preview window to sample a color. The luminance, saturation, and hue controls in the plug-in are updated to reflect the sampled color.

   If you want to see the portion of the image you sampled, select the SHOW MASK check box. The selected area is displayed in white.

   If you want to reverse the portions of the image that will be affected or not affected by the plug-in, select the INVERT MASK check box.

Original picture

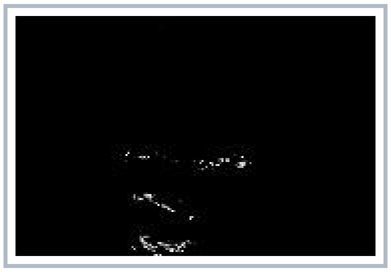


SHOW MASK selected after sampling the middle yellow stripe

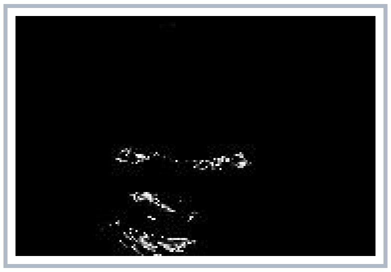
Limit the luminance values to be adjusted

You can see in the previous example that sampling a color with the eyedropper did not select the full range of yellow that we want to adjust. Selecting the LIMIT LUMINANCE checkbox and choosing a luminance range will help extend or restrict the selection.

1. After you select a color with the EFFECT AREA eyedropper, click the arrow ▶ to expand the LIMIT LUMINANCE controls.
2. Select the ENABLE check box.
3. Drag the LOW and HIGH sliders to set the range of luminance values for the selected color that you want to affect.
4. Drag the SMOOTH slider to adjust how smoothly the filter blends pixels outside the selected range. Choose 0 to perform no blending, or drag the slider to the right to blend.



Original mask after sampling color with eyedropper



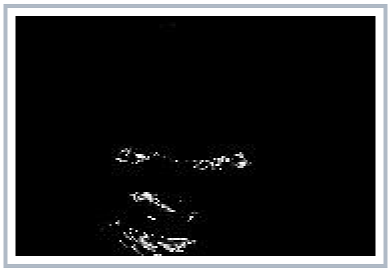
Mask after setting the LOW slider to 0 and the HIGH slider to 255

Limit the saturation levels to be adjusted

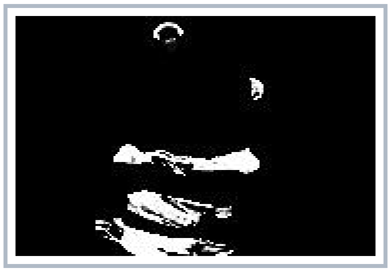
In the previous example, adjusting the luminance range increased the range of yellow that was selected, but the full range of yellow that we want to adjust is still not selected.

Selecting the LIMIT SATURATION checkbox and choosing a saturation range will help extend or restrict the selection.

1. After you select a color with the EFFECT AREA eyedropper, click the arrow ▶ to expand the LIMIT SATURATION controls.
2. Select the ENABLE check box.
3. Drag the LOW and HIGH sliders to set the range of saturation levels for the selected color that you want to affect.
4. Drag the SMOOTH slider to adjust how smoothly the filter blends pixels outside the selected range. Choose 0 to perform no blending, or drag the slider to the right to blend.



Mask after sampling yellow and adjusting luminance



Mask after setting the LOW slider to 38.7, HIGH slider to 162, and SMOOTH slider to 12.5

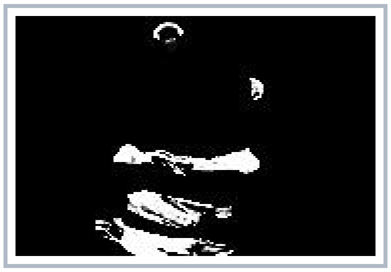
Limit the hue to be adjusted

Selecting the LIMIT HUE checkbox and choosing a center hue and width can also help extend or restrict the selection.

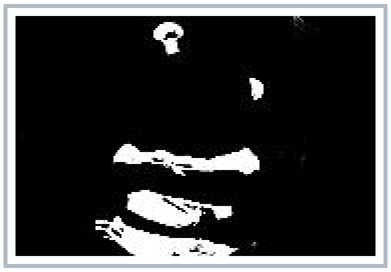
1. After you select a color with the EFFECT AREA eyedropper, click the arrow ▶ to expand the LIMIT HUE controls.
2. Select the ENABLE check box.
3. Drag the CENTER and WIDTH sliders to set the range of colors that you want to affect.

   > **TIP** If you want to adjust all colors except the selected color, add 180 degrees to the CENTER value and set the WIDTH high enough that all colors except the selected color are within the range. If you set the SATURATION to 0, you can create a black-and-white scene where only a single color remains.

4. Drag the SMOOTH slider to adjust how smoothly the filter blends pixels outside the selected range. Choose 0 to perform no blending, or drag the slider to the right to blend.



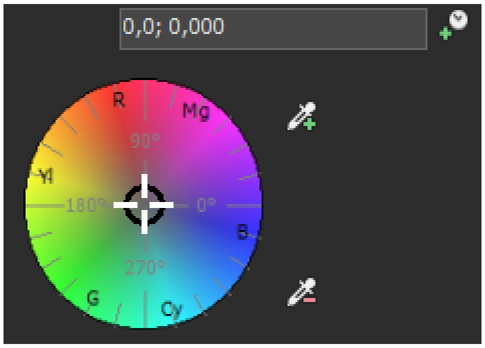
Mask after adjusting luminance and saturation. CENTER slider is 141 and WIDTH is 10.



Mask after setting the CENTER slider to 269.6 and WIDTH slider to 270.9. Better selection of stripes and antennae.

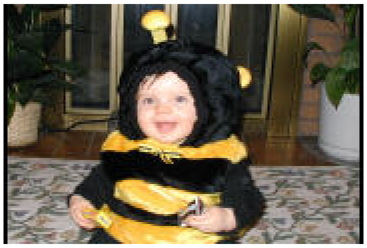
Adjust the selection's color

1. Choose the color you want to add to the selection:



0,0; 0,000

- Drag the point in the center of the color wheel to pick a hue and saturation.
- Enter appropriate values in the format (angle, magnitude) into the edit box to define a hue and saturation.
- Use the complementary color eyedropper tool and sample a color on your screen to add the sampled color's complement to the selection.
- Use the adjustment color eyedropper tool and sample a color on your screen to choose the color you want to add to the selection.



Original picture

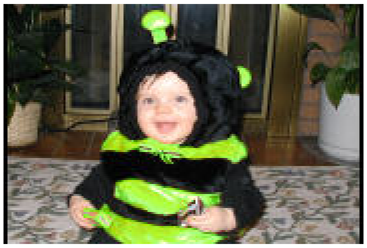


Image after setting the ANGLE to 258.8 and MAGNITUDE to 0.75

2. Drag the ROTATE HUE slider to change the color of the selection.

3\.

Original picture

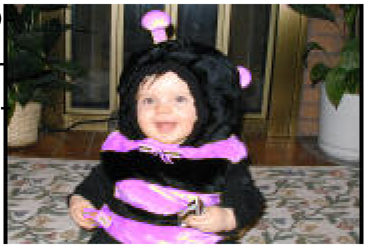


Image after setting the ROTATE HUE slider to 260

Drag the SATURATION slider to adjust the selection's overall saturation.

Original picture

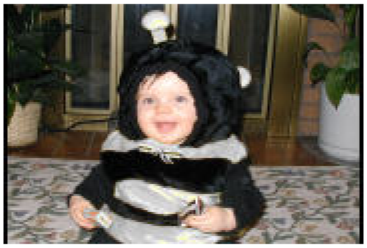


Image after setting the SATURATION slider to 0

4. Drag the GAMMA slider to adjust the overall brightness of the video. 1 is the default setting; higher settings produce a brighter image, and lower settings produce a darker image.

Original picture

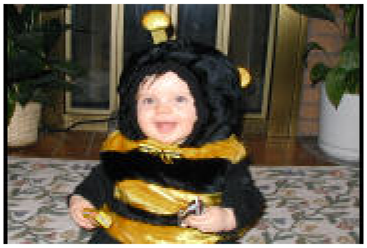


Image after setting the GAMMA slider to 0.5

5. Drag the GAIN slider to add a gain to all luminance values in the video. All luminance values are multiplied by the GAIN setting.

6.

Original picture

Image after setting the GAIN slider to 1.3

Drag the OFFSET slider to offset all luminance values in the video. The OFFSET setting is added to all luminance values.

Original picture

Image after setting the OFFSET slider to 30

7. Drag the ALPHA slider to adjust the transparency of the selection.

Original picture

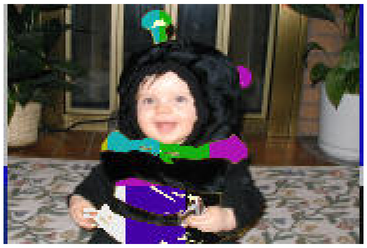


Image after setting the ALPHA slider to 0 (Color bars are on track below bumblebee)

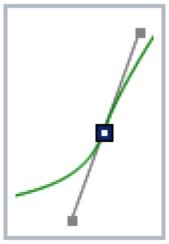
Color Curves

Use the Color Curves effect to adjust the red, green, and blue channels using an envelope.

Original

Brighten Brights

1. Select the channel you want to adjust from the CHANNEL drop-down list, or choose RGB to adjust all channels at the same time. The color curve for each channel is displayed as a separate envelope.
2. Adjust envelope points:
   - Double-click to add a new envelope point.
   - To delete an envelope point, right-click it and choose DELETE POINT(S) from the submenu.
   - Drag a point to change its position.
   - Select a point to enable its tangent curve. You can drag the tangent to adjust the curvature of the envelope around the envelope point:

   - Right-click the tangent curve and clear the LOCK TANGENT(S) command to adjust the halves of the curve independently, or choose RESET TANGENT(S) to reset the tangent to horizontal.
3. To force all color curves to match a curve that you've adjusted, click one of the following buttons:

Item	Description
G B R	Click to force the green and blue curves to match the current settings for the red curve.
R B G	Click to force the green and blue curves to match the current settings for the red curve.
R G B	Click to force the green and blue curves to match the current settings for the red curve.

Color Match

The Color Match plug-in allows you to match the color between clips. You can use this plug-in to match two cameras shooting the same scene or for artistic effect.

1. Apply the Color Match plug-in to the video that you want to process. You can use the plug-in as a media, event, track or output effect.
2. Select the MATCH BRIGHTNESS checkbox if you want the plug-in to attempt to match the brightness in the source and target frames.

   When the checkbox is cleared, color matching is performed without adjusting the brightness.
3. Click a button in the SOURCE IMAGE area to select the image you want to use as a reference for color matching.
   - To match to the current frame in the Trimmer window, click the TRIMMER BUTTON in the Color Adjustment plug-in.
   - To match to the contents of your clipboard, copy the source image to the clipboard in another application (or use the COPY SNAPSHOT TO CLIPBOARD command in the Video Preview or Trimmer window) and then click the PASTE FROM CLIPBOARD button
   - To select an image you want to adjust to, click the FILE button in the Color Match Plug-in and navigate to an image file.

- To capture a portion of your screen and match to it, click the SCREEN button The cursor turns into a crosshair, allowing you to capture a portion of your screen.
- To match to the current frame in the Video Preview window, click the PREVIEW button in the Color Match plug-in.

You can achieve different results by sampling different parts of your source image.

4. Click a button in the TARGET IMAGE area to select the image you want to match to your source.
   - To match the current frame in the Trimmer window to your source image , click the TRIMMER BUTTON in the Color Match plug-in.
   - To match the contents of your clipboard to the source image, copy the target image to the clipboard in another application (or use the COPY SNAPSHOT TO CLIPBOARD command in the Video Preview or Trimmer window) and then click the PASTE FROM CLIPBOARD button .
   - To match your source image to another image, click the FILE button in the Color Match Plug-in and navigate to an image file.
   - To capture a portion of your screen and match it, click the SCREEN button The cursor turns into a crosshair, allowing you to capture a portion of your screen.
   - To match to the current frame in the Video Preview window to the source image, click the PREVIEW button in the Color Match plug-in.

   You can achieve different results by sampling different parts of your source image.
5. Drag the STRENGTH slider in the Color Match plug-in to adjust the amount of color matching applied to your clip.

   Moving the slider all the way to the left (0) bypasses color matching; moving the slider all the way to the right (1) displays only the processed video. In the intermediate settings, original and adjusted video are mixed.

6. Use the Video Preview window to verify your color matching and adjust the settings as needed.

HSL Adjust

HSL (Hue, Saturation, and Luminance) which is sometimes referred to as lightness, is a correction filter used to alter the display of colors in video. Besides improving an image or video clip, this effect can be used in many creative and artistic applications.

Original

HSL Adjust

Item	Description
ADD TO HUE	Adjusting the hue changes the colors in an image. Hue deals with color in a different way than the RGB/CMYK method of a color balance effect, with Hue represented by a 360 degree color circle. Either end of the hue slider (0.0000 or 1.0000) leave the hue unaltered.
SATURATION	Saturation controls the intensity of the particular hue selected with the hue slider. Moving the slider all the way to the left (0) removes all hue from the image, converting it to gray scale.
LUMINOSITY	Controls the overall brightness of the image or video. A value of 1.0000 leaves the brightness at its original level.

Invert

Invert reverses the complimentary colors and the brightness in an image or video, giving it a photo negative effect.

Original

Invert.

LAB Adjust

LAB Adjust allows you to manipulate colors in the Lab (L*a*b* or L*, a*, b*) color space. Adjusting colors in the LAB color space allows you to perform powerful edits:

- Adjust lightness (brightness) without affecting colors.
- Perform luminosity inversion without affecting colors.
- Change colors without affecting brightness.
- Produce high-quality desaturation and black-and-white conversion.
- Change subsets of colors without affecting their opponent colors.

Item	Description
Brightness	The BRIGHTNESS control allows you to gradually adjust the brightness of the image without changing the colors in an image. Drag the slider to the right to brighten the image, or drag to the left to darken the image.
Channel a	The a channel contains green and magenta color information. Moving the slider all the way to the left (-1) shifts the green and magenta colors to green; moving the slider all the way to the right (1) shifts the green and magenta colors to magenta.
Channel b	The b channel contains blue and yellow color information. Moving the slider all the way to the left (-1) shifts the blue and yellow colors to blue; moving the slider all the way to the right (1) shifts the blue and yellow colors to yellow.
Invert Luminosity	Select the checkbox to invert all luminance values, which creates a negative image.
Desaturate	The DESATURATE control allows you to gradually adjust the a and b color channels to black and white. Moving the slider all the way to the right (1) removes all color from the image, converting it to gray scale.

LUT Filter

LUT stands for Look Up Table, and is often referred to as a Color Look Up Table. LUTs are commonly used to add a specific color look to your video. Think of them as a universal color preset. LUTs are applied as an OFX plug-in and can be added, like other video effects, to tracks, video events, source media files (via the Project Media window), or to the entire video project using any of the methods described in this chapter. The one difference is that you will have to browse to the LUT, to select it, from the plugin window.

1. Open the Video effects window and expand the OFX folder
2. Drag the effect LUT Filter to the desired location (Media, Event, Track, Main output)
3. In the Video FX window, click the BROWSE button
4. Navigate to where you saved the LUT file, select the file, and click OPEN
5. Pick an Interpolation; LINEAR (GOOD) or TETRAHEDRAL (BEST)
6. Adjust the STRENGTH slider to achieve the look you prefer

NOTE

- Linear (good) interpolation is fast and reasonably accurate where as Tetrahedral is more accurate, but slightly slower.
- The LUT filter produces an image that is a blend of the original image and the color-adjusted image. The Strength slider controls the mix, or the percentage of the color-adjusted image vs. the original image. A setting of 0 would be equal to no LUT being applied.

Saturation Adjust

The Saturation Adjust effect allows you to boost or cut a specific range of saturation levels. You can fine tune color levels in the same way the you use the Track EQ.

Original

Boost Midtones

Item	Description
RATIO	Drag the slider or type a value in the box to set the amount by which the selected range of saturation levels will be boosted or cut.
CENTER	Drag the slider or type a value in the box to set the center of the range of colors that will be adjusted. **TIP** To quickly find the appropriate setting, set the SPREAD control to a low value, increase the AMOUNT setting, and drag the CENTER slider back and forth until you find the range you want.
SPREAD	Drag the slider or type a value in the box to set the range of hues around the CENTER value that will be adjusted.
LOW	Drag the slider or type a value in the box to boost or cut saturation from the low end of the spread to the left end of the graph.
UP ONE	Drag the slider or type a value in the box to boost or cut saturation from the high end of the spread to the right end of the graph.

Sepia

Sepia is a specific color tint associated with old movies.The default settings will produce a standard sepia tone, but you can use the color boxes to tint your video any color that you want.

Original

Sepia (Preset=Sepia Warm)

Item	Description
Color	Click the arrow ▶ to show or hide the color controls. You can use the color picker, type color values (or names), or use the eyedropper to sample a color from your screen. The color you select will be used as the filter color.
Blending strength	Determines the overall opacity/transparency of the color filter.
Blending falloff	Determines how smooth the filter mixes with the source video's original colors.Values closer to 1.000 (right) will have less color overall and therefore appear more grey.

Soft Contrast

Effect Tab

Item	Description
Stretch range	Extends the high end of the luminance values without boosting the dark values.
Contrast	Controls the overall amount of contrast correction. Application of subsequent parameters are also controlled by this value.
Diffusion	Controls the extent of simulated light diffusion. Higher values result in softer highlights.
Low trim	Controls the amount of contrast enhancement in darker regions. Higher values result in lighter dark regions.
High trim	Controls the amount of contrast enhancement in brighter regions. Higher values result in darker highlights.
Tint	Adjusts the amount of color cast in the resulting image.
Correction hue	Selects the hue component of the color used for tinting.

Vignette Tab

Item	Description
Exterior effect	Determines if and what type of vignette framing is applied around the image. The different types of effect are Blur, Black, White, and Transparent. *Each option for Exterior effect has the following parameters. Blur has additional parameters.
Level	Determines how visible the effect is. Higher values make the effect more apparent.
Horizontal blur	Adjusts the extent of horizontal softening. Higher values result in more blurring.
Vertical blur	Adjusts the extent of vertical softening. Higher values result in more blurring.
Vignette shape	Determines which shape is used to generate the framing. The two shapes, rectangle and ellipse, each have its own set of parameters.
Softness	Controls the crispness of the vignette edges. Higher values create softer edges.
Width	Controls the width of the vignette. Higher values create a wider ellipse.
Height	Controls the height of the vignette. Higher values create a taller ellipse.
Corner radius	Rounds the corners of the rectangle. Higher values create corners with larger radii.
X Position	Adjusts the position of the rectangle on the x axis. Higher values move the rectangle from left to right.
Y Position	Adjusts the position of the rectangle on the y axis. Higher values move the rectangle from up to down.

White Balance

The White Balance plug-in allows you to correct video and images in which white balance has been set incorrectly.

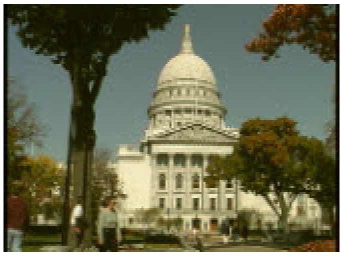
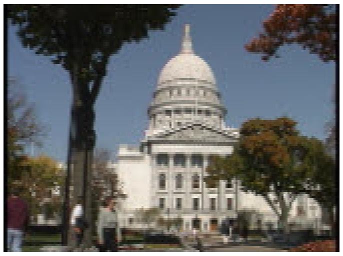


Image with Incorrect White Balance



Corrected image

1. Position your cursor on the frame you want to adjust in the timeline.
2. Click the SELECT WHITE COLOR color picker.

   You can use the color picker, type color values (or names), or use the eyedropper tool to sample a color from your screen.
3. In the Video Preview window, click a portion of the frame that should be white. The image is adjusted to make the color you clicked white.
4. If you want to fine-tune the effect, you can drag the AMOUNT OF CORRECTION slider.
5. If you want to adjust the overall brightness of the image, you can drag the BRIGHTNESS slider.
6. If there is no neutral color available in the video, you can adjust the white color also by setting the Color TEMPERATURE or the TINT with the according slider.

Creative Effects

Add Noise

Use the Add Noise filter to add static or noise to a video sequence. When applied to a simple solid colored background with a monochrome setting and animated, it can produce a pattern similar to a television that is not tuned to any station.

***FIGURE** Original*

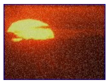
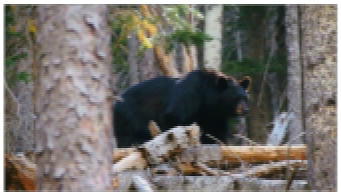


***FIGURE** Add Noise*

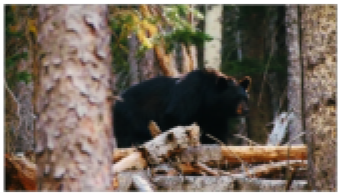
Item	Description
Noise level	Determines the strength of the effect.
Monochromatic	Select this option to make the noise all one color. When this option is not selected, the static will appear with random colors.
Gaussian noise	A method for creating more intense noise.
Animate	Check this box to make the noise move randomly.

AutoLooks

Use this effect on media, events, tracks, or the entire project to quickly give your video the look of a specific movie, genre, or film style.



Original



"Restored" look applied with strength 0.337

Item	Description
Look	Select a movie look from the drop-down list.
Level	Reduce the intensity of the color adjustment with the Strength fader

Black Bar Fill

When you insert image or video material into a movie that has a different aspect ratio, black bars appear at the edges. This happens, for example, whenever you insert videos or pictures taken in portrait mode into a movie in landscape mode.

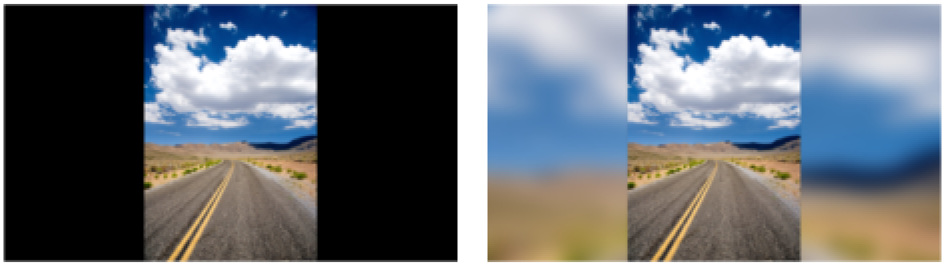


FIGURE *An upright image in a 16:9 video, on the left without, on the right with black bar filling*

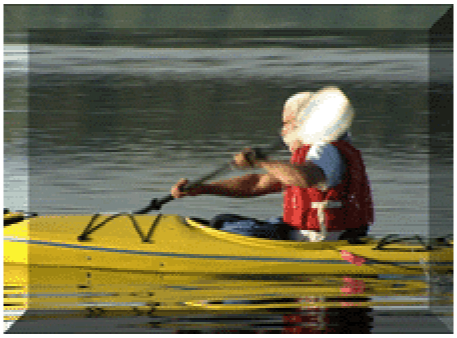
With the Black Bar Fill plug-in, you can fill these black bars with a background of matching color. For this purpose, a blurred copy of the image material is placed behind the image, enlarged so that the background is completely filled in and the black bars are hidden.

Item	Description
Foreground | Shadow blur	To make the actual video stand out better from the background, it is provided with a shadow. How clearly this shadow is visible depends on how much blur you set for the shadow with the slider.
Background | Position	Use the small crosshair in the preview monitor to determine the position of the background image. You can also enter the values numerically or click the arrow next to POSITION to display an X/Y control for it.
Background | Scaling	Use the slider to adjust the magnification of the image.
Background | Blur	Set a value for the background blur using the slider. Note that simply by zooming in on the image, blurriness is already created.

Borders

Border changes the appearance of the perimeter of your video.

Original



Beveled

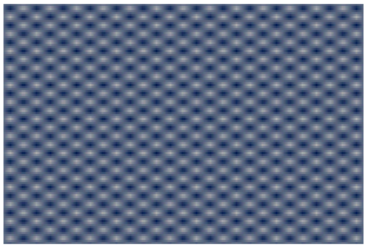
Item	Description
TYPE	Choose a border type from the drop-down list: ● BLURRED: Adds a border with a feathered, transparent edge. ● BEVELED: Adds a rectangular border with mitered edges. ● SOLID: Adds a solid rectangular border.
SIZE	Drag the slider to adjust the width of the border.
ANGLE	When BEVELED is selected in the TYPE drop-down list, drag this slider to simulate a light source shining on your beveled surface. Set to zero to place the light source at the top of the border, or increase the angle to move the light source clockwise around the border.
COLOR	When BEVELED or SOLID is selected in the TYPE drop-down list, use the color sliders or enter RGB values to choose the color of your border and specify an Alpha channel. Also specify an alpha channel.

Bump Map

The Bump Map plug-in can add texture and lighting effects.

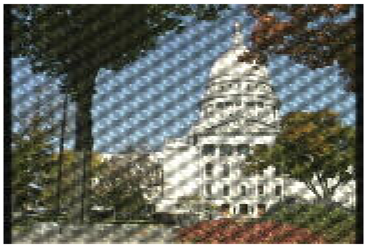
The texture of the bump map is applied to the composited child tracks: light sections of the map represent high areas, and dark sections represent low areas.

You can also use the Bump Map plug in as a standard video effect. In this mode, the image is used as a source image and bump map.



Parent track

Child track



Bump Map Output

Item	Description
SRC X/Y/Z	Drag the yellow dot (or enter coordinates in the X and Y boxes) to set the position of the light source. Drag the vertical slider (or enter a value in the Z box) to set the height of the light source.
DST X/Y	Drag the + (or enter coordinates in the X and Y boxes) to set the destination of the light. These controls are available only if SPOTLIGHT is selected in the LIGHT TYPE drop-down list.
LIGHT TYPE	Choose a setting from the drop-down list to choose the type of light that is projected on the map.
INTENSITY	Drag the slider (or enter a value in the box) to adjust the strength of the light source.
FOCUS	Drag the slider (or enter a value in the box) to adjust the focus of the light source. Decrease the setting to create a tight, focused spotlight, or increase the setting to increase the width of the beam. These controls are available only if SPOTLIGHT is selected in the LIGHT TYPE drop-down list.
AMBIENCE	Drag the slider (or enter a value in the box) to adjust the amount of ambient light in the image.
SHININESS	Drag the slider (or enter a value in the box) to make the surface of the image appear more or less reflective.
BUMP HEIGHT	Drag the slider (or enter a value in the box) to set the maximum bump height.
BUMP CHANNEL	Choose a setting from the drop-down list to indicate which channel you want to use for the bump map.
WHITE IS HIGH	Select this checkbox if you want white areas in the bump map to be treated as the high areas of the texture. Clear the checkbox if you want black areas to be high.

Item	Description
FLIP INPUT SURFACES	Select this checkbox to swap the source and map images.

Convolution Kernel

Use the Convolution Kernel effect to perform image processing by recalculating each pixel's color value based on the surrounding pixels. Varying methods of convolution can produce blurring, embossing, and sharpening.

FIGURE *Original*

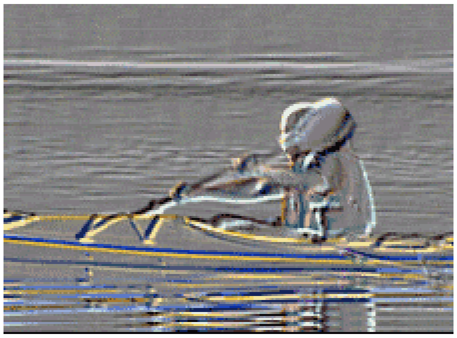


FIGURE *Emboss*

Item	Description
Row 1 Row 2 Row 3	Click the arrow ▶ to show or hide the center controls. The numbers in the Convolution Matrix are used to determine the weight that each surrounding pixel bears on the center pixel. For example, setting the COLUMN 2 value to 1 and the COLUMN 1 and COLUMN 3 values to 0 produces no change because you are simply multiplying the source pixel value by one. However, setting the ROW 1, COLUMN 1 value to 1, the ROW 2, COLUMN 2 value to 0, the ROW 3, COLUMN 3value to -1, and the Offset to 0.5 will produce the embossed effect you see in the preceding example. Embossing occurs because you are taking the color value from a pixel above and to the left of your pixel and subtracting from it the color value of the pixel below and to the right of it. The 0.5 OFFSET setting creates a 50% white (gray) color value as base. The subtraction of the surrounding pixels makes the edges appear lighter or darker, creating the emboss effect.
Rotation	Enter a value to rotate the convolution matrix before applying it to the image. By using settings greater than 360 degrees, you can apply multiple revolutions.
Scaling	When the AUTO NORMALIZE checkbox is cleared, the multiplication value from the Convolution Matrix is divided by this value to create a weighted average.
Offset	This value is added to each channel of the processed image. A setting of 0 applies no offset; a setting of 1 is the maximum and adds pure white to each channel.
Auto Normalize	Select this checkbox to normalize the SCALE setting so that the kernel's average is 1.

Cookie Cutter

Use the Cookie Cutter effect to create picture-in-picture effects or to crop your video.

Original

Cookie Cutter (Preset=Circle, Center)

Item	Description
Color Sliders	Click the arrow ▶ to show or hide the color controls to set the color of the border around the cutout.. You can use the color picker, type color values (or names), or use the eyedropper to sample a color from your screen.
Shape	Choose a setting from the drop-down list to determine the cutout shape.
Then	Determines what part of the video image is revealed/masked: ● Cut everything apart from section: The cutout shape forms a window which displays your video. ● Cut section: The cutout shape covers your video and the area outside the shape is visible.
Feather	Drag the slider to determine how smoothly the cutout border fades into the background.
Borders	Drag the slider to determine the size of the border around the cutout shape.
Repeat X	Drag the slider to repeat the cutout shape along the horizontal axis by the number of times specified.
Repeat Y	Drag the slider to repeat the cutout shape along the vertical axis by the number of times specified.
Size	Drag the slider to set the size of the selected cutout shape.

Item	Description
Center	Enter the coordinates for the center of the effect into the text boxes or drag the circle on the position map to the desired location. Click the arrow ▶ to show or hide the center controls. Perform any of the following actions to set the center of the cutout within your project's video frame: ● Drag the point in the position box: ✛ ● Type coordinates in the position box.0.00, 0.00 represents the lower-left corner of the frame, 0.50, 0.50 represents the center, and 1.00, 1.00 represents the upper-right corner. 0,50; 0,50
Stereoscopic 3D depth	Drag the slider to adjust the horizontal alignment of the left and right-eye views to set the perceived position of the ● video relative to screen depth ● cutout relative to screen depth

Crop

Crop allows you to define a specific area of a video frame by adjusting its size, position, rotation, and transparency. This enables you to crop or highlight specific parts of the video, and you can even create animated effects by using keyframes to change the settings over the course of the video.

You can apply the Crop OFX plug-in at all the same places you can apply any OFX Plug-in; Media level, Project, Track or Event. To take advantage of the Preview Window interacts it is best applied at the Track or Event level. In this example, we'll add it to a specific event.

1. With at least one event on the timeline, open the Video FX window.
2. Expand the OFX folder.
3. Choose CROP.
4. Drag and drop the default preset on the event. You now see the Video Event FX window as well as the interacts in the Video Preview window.
    1. The interact controls include four crop handles; Left, Top, Right, Bottom. Once you drag one of these handles, the handle opposite it becomes the anchor point. e.g., if you drag the right handle the left handle becomes the anchor point. The anchor point has a black dot in the middle of the handle icon.
5. To crop off a portion of the image, click and drag a crop handle toward the center. e.g., to crop off the left side of the image, drag the left crop handle toward the center.
6. To crop using the Video FX window:
    1. Click the Anchor Point drop-down arrow and choose an anchor point.
    2. Use the X CROP or Y CROP slider or enter a specific value in the X or Y text box to set the crop.
7. To change the location of the cropped area using the Video Preview interact, click and drag the selection area to a new position.
8. To change the Location using the Video FX window, type a new value into the LOCATION text box. Or, click the arrow next to Location in the Video FX window to expand the LOCATION field and click and drag the location control.
9. To adjust the Angle using the Video Preview window, click and drag the circle inside the selection area.
10. To adjust the Angle using the Video FX window, enter a value in the angle text box, or drag the Angle slider.

11. To adjust Opacity, enter a number in the OPACITY text box in the Video FX window or drag the OPACITY slider.

> **TIP** If you want to create an animated crop, use the keyframe controller at the bottom of the Video Event FX window to establish distinct settings throughout the duration of the event. To access the keyframe controller click the animate button associated with the parameter you want to animate. For more information, see "Keyframe animation". Because the parameters are so dependent on each other it is important to have animation turned on for ALL the parameters before you start to animate a crop.

Layer Dimensionality

You can use the layer dimensionality filter to add depth to video and images that contain alpha transparency. The filter allows you to add shadow, glow, and embossing effects.

Item	Description
Shadow	Click the arrow ▶ to show or hide the shadow controls. TYPE: Choose a setting from the drop-down list to choose whether you want to apply no shadow, a drop shadow, or an outer shadow to your layer. HEIGHT: Drag the slider to the right to increase the shadow offset, or drag left to decrease the offset. The position of the shadow is also controlled by the Light Location settings. BLUR: Drag the slider to determine how smoothly the text shadow blends into the background. OPACITY: Drag the slider to adjust the transparency/opacity of the shadow.
Glow	Click the arrow ▶ to show or hide the glow controls. TYPE: Choose a setting from the drop-down list to choose whether you want to apply a glowing outline to your layer. AMOUNT: Drag the slider to adjust the intensity of the glow effect. COLOR: To set the color of the glow effect, you can use the color picker, type color values (or names), or use the eyedropper to sample a color from your screen.

Item	Description
Emboss	Click the arrow ▶ to show or hide the emboss controls. FOREGROUND: Drag the slider to the left decrease the height of the foreground embossing, or drag to the right to increase the height of the embossing. BACKGROUND: Drag the slider to the left decrease the height of the background embossing, or drag to the right to increase the height of the embossing. LIGHT INTENSITY: Drag the slider to adjust the strength of the light source. LIGHT AMBIENCE: Drag the slider to adjust the amount of ambient light in the image. ROUNDNESS: Drag the slider to the left to create a hard bevel, or drag to the right to create a rounded embossed effect. SHININESS: Drag the slider (or enter a value in the box) to make the surface of the image appear more or less reflective.
Foreground Opacity	Drag the slider to the left to make the foreground more transparent, or drag to the right to make the foreground more opaque.
Light Location	Perform any of the following actions to position the light source within your project's video frame: Drag the point in the position box: ⌖ Drag the slider to set the height of the light source above the frame. You can also type coordinates in the position box.

Median

This plug-in is another method of blurring an image that works by replacing pixel values with the median value from the surrounding pixels. This effect produces a smudged appearance that resembles a watercolor effect at higher pixel values. At lower values, it can be used as a correction filter to remove noise.

FIGURE *Original*

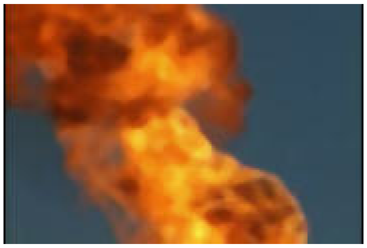


FIGURE *25% preset*

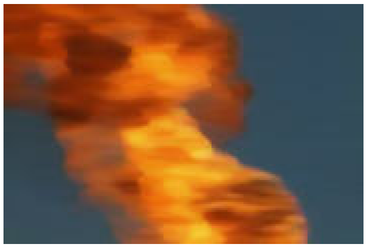


FIGURE *Round Extreme Horizontal Preset*

Item	Description
Horizontal range Vertical range	Drag the sliders or enter values in the edit boxes to set the size of the area surrounding each pixel the plug-in will use to determine the median value (the midpoint of the distribution of pixel values).
Offset	Moving the slider to the left darkens the image; moving the slider to the right brightens the image.
Circular area processing	Select this checkbox if you want the plug-in to use a circular area around each pixel when determining the median. When the checkbox is cleared, the plug-in will use a square area.

Min and Max

This filter can be used to pixelate an image or video. The exact method of pixelation is based on minimum or maximum brightness values. The pixels in the image are first grouped together and then the minimum (or maximum) pixel value in each group is applied to all of the pixels in that group.

FIGURE *Original*

FIGURE *Min*

FIGURE *Max*

Item	Description
Operation	Select an option from the drop-down menu to indicate whether you want to pixelate using the minimum or maximum brightness values.
Horizontal range Vertical range	Drag the sliders or enter values in the edit boxes to determine the size of the groups of pixels that are created in this effect.
Circular area processing	Select this checkbox if you want the plug-in to group a rounded area around each pixel. When the checkbox is cleared, the plug-in will use a square area.

Mirror

The Mirror effect reflects a video event along a specified center.

FIGURE *Original*

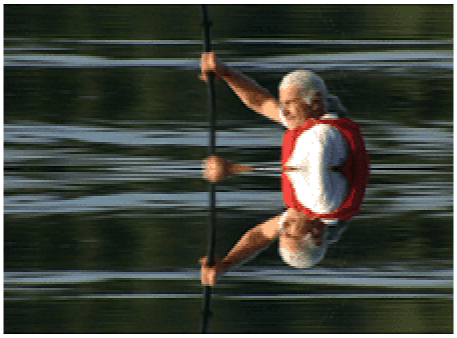


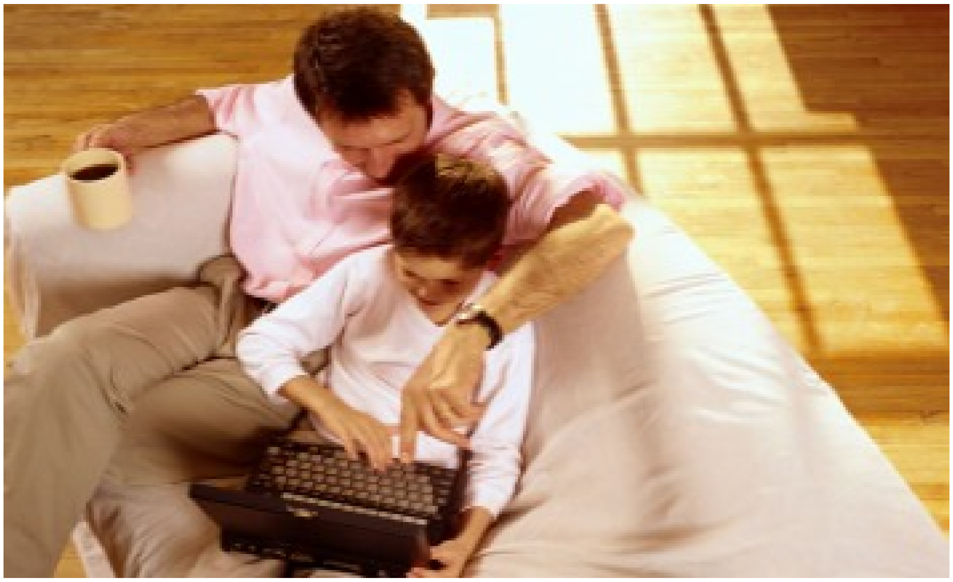
FIGURE *Reflect Top*

Item	Description
ANGLE	Drag the slider to set the angle of reflection: 0 reflects the top of the video; 180 reflects the bottom.
CENTER	Click the arrow ▶ to show or hide the center controls. Perform one of the following actions to set the center of the reflection: ● Drag the point in the position box: ⌖ ● Type coordinates in the position box. 0.00, 0.00 represents the lower-left corner of the frame, 0.50, 0.50 represents the center, and 1.00, 1.00 represents the upper-right corner. 0,50; 0,50
BACKGROUND	Click the arrow ▶ to show or hide the color controls. You can use the color picker, type color values (or names), or use the eyedropper to sample a color from your screen to choose the color of the background that will be displayed if your video does not fill the entire frame..

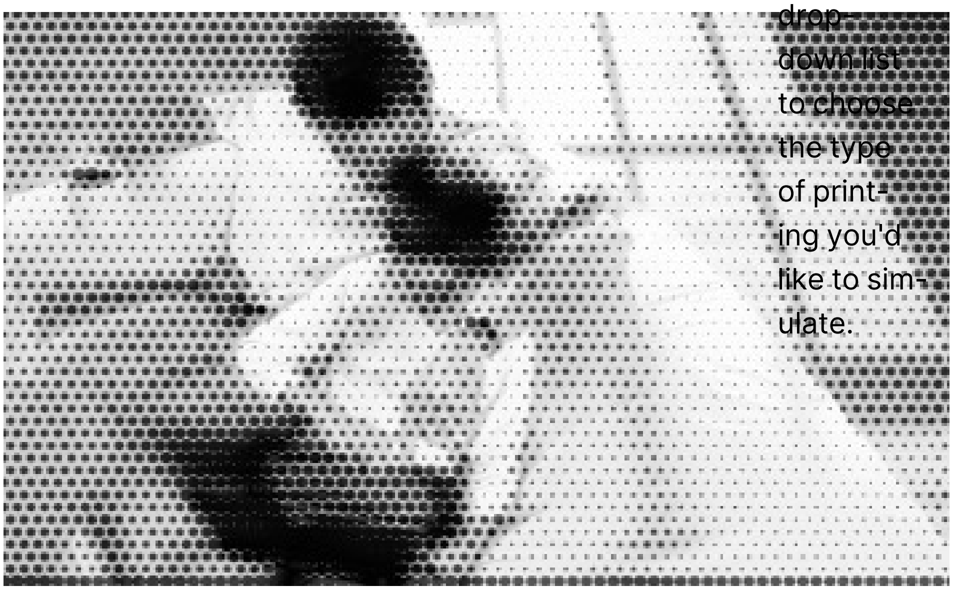
Newsprint

The News Print effect simulates the effect of scanning images from a color photo, offset print, newspaper, or magazine. You can adjust the dot size and type of printing you want to simulate.

Item	Description
DOT SIZE:	Drag the slider or enter a value in the box to specify the dot size.
TYPE	Choose a setting from the drop-down list to choose the type of printing you'd like to simulate.



Original



Newspaper

Picture in Picture

The Picture in Picture effect allows you to resize and position clips for picture-in-picture compositing.

1. Add two media clips to your project. The video that you want to display as a picture over a background picture should be on the top track. The background picture should be on the lower track.
2. Open the video effect widow, expand the OFX folder and choose the Picture-in-Picture effect.
   1. To apply the effect to the track; drag the effect to the track header.
   2. To apply the effect to an event; drag the effect to the event.

   You now see the top video in the default PiP positioned in the middle of the preview window.
3. There are two different methods for changing the location of the PiP; using the controls in the Video FX window or by manipulating it directly in the Preview window.

   Using the Video FX window:
   1. In the video FX window click the arrow to the left of LOCATION
   2. Click and drag the position control ✛ to reposition the PiP window.
   3. You can also type specific coordinates into the Location text box

   Using the Preview window:
   1. Click and drag anywhere inside the PiP window in the preview window. When you are in window-move mode the border will turn green.
4. There are two different methods for changing the size of the PiP; using the controls in the Video FX window or by manipulating it directly in the Preview window.

   Using the Video FX window:
   1. Drag the SCALE slider or type a specific number into the SCALE text box.

   Using the Preview window:
   1. When the Video FX window is open adjustment handles are located on each corner and on the edges of the PiP window. These handles

enable you to change the size of the PiP window. When you access these handles the borders turn red.

2. Position your mouse over one of the adjustment handles. The mouse changes to a 4-way pointing arrow. Click and drag a corner adjustment handle to resize while maintaining the aspect ratio.

In VEGAS Pro, some additional settings of the Picture-in-Picture FX are available:

- You can also adjust the angle of the PiP using either the Video FX window or the Preview window.
  - To adjust the angle using the Video FX window, move the ANGLE slider or type a specific number into the ANGLE text box.
  - To adjust the angle using the Video Preview window, point your mouse anywhere along the circle inside the PiP window and your mouse will change to a curving arrow. Click and drag the circle. The control borders will change to the color purple.
- With MODE: you can change the Mode setting from FIXED SHAPE to FIXED PARALLELOGRAM or FREE FORM to not to maintain the form and/or aspect ratio of the picture:
  - In Mode FIXED PARALLELOGRAM you can shift the sides of the picture to get a parallelogram, where the opposite sides stay at the same length. Use the SHEAR slider in the FX window to shift the vertical sides or move the corner points to achieve an arbitrary parallelogram.
  - The Mode FREE FORM enables you to distort the picture into an arbitrary quadrangle where the opposite sides' length can differ. Adjust your picture with the four CORNER POINTS controls in the FX window or click and drag the corner adjustment handles in the Preview window.
- To adjust the OPACITY of the PiP, drag the OPACITY slider in the Video FX window or type a specific number into the Opacity text box.

Pixelate

Pixelate creates the effect of viewing the video at a lower resolution, making it appear blocky. Very effective when used with keyframe animation to move from highly pixelated to the unaltered video as a sort of transition. The effect can also be combined with a mask to hide someone's face or anything else you might want to cover.

The HORIZONTAL PIXELATION and VERTICAL PIXELATION sliders control the dimensions of the pixels. If the sliders are set to the same value, the pixels are square.

FIGURE *Original*

FIGURE *Pixelated*

Slow Motion

Slow motion is a powerful video effect used to create a fluid, slowed-down version of the original footage. VEGAS Pro offers several methods to apply this effect, providing both high-quality results and flexibility in controlling playback speed.

- Slow Motion OFX Plug-in:

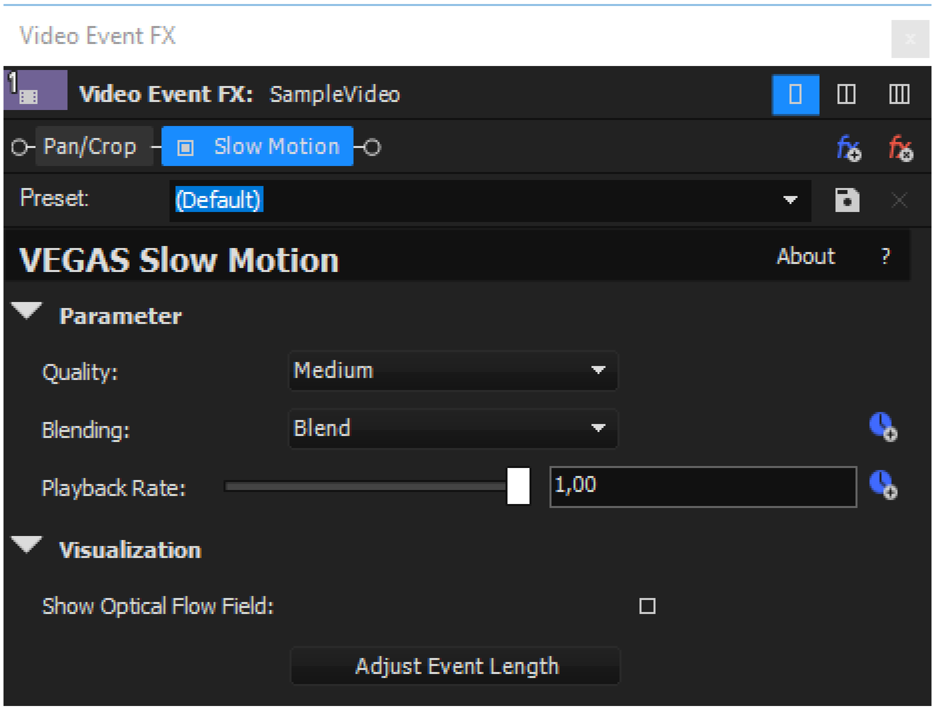
  This method allows you to control the playback rate and fine-tune the quality of the effect with various parameters.

- Direct Timeline Editing:

  Adjusting event properties or adding velocity envelopes directly on the timeline offers a more hands-on approach to slow motion.

> **USE CASES**
> - Creating dramatic moments in sports footage.
> - Enhancing emotional scenes in film projects.
> - Highlighting important actions or details in tutorials or presentations.

Slow Motion OFX Plug-in


Video Event FX
Video Event FX: SampleVideo
Pan/Crop
Slow Motion
About
?
Parameter
Visualization
Adjust Event Length

Preset: (Default)

VEGAS Slow Motion

Quality: Medium

Blending: Blend

Playback Rate: 1,00

Show Optical Flow Field: ☐

FIGURE *Slow Motion FX Dialog*

1. Click the VIDEO FX tab to open the Video FX window.
2. Select SLOW MOTION from the list of plug-ins.
3. Drag the DEFAULT preset onto the timeline clip event that you want to apply it to.
4. Adjust the parameters.

   Parameters

Element	Description
Preset	This allows you to select predefined settings for the Slow Motion effect, enabling faster editing by using ready-made configurations.
Quality	Controls the quality of the motion effect calculation. Options are Low, Medium, and High. Higher quality requires more processing power but delivers more precise results.
Blending	You can choose between "Blend" and "Nearest Frame". Blend creates smoother transitions, while Nearest Frame uses the closest available frame for clarity.
Playback Rate	Controls the speed of video playback. A value below 1.0 slows the video down, while values above 1.0 speed it up. This parameter can be animated for dynamic effects.
Show Optical Flow Field	Enable this option to visualize the motion flow fields used to calculate the in-between frames. This can help diagnose issues with motion detection.
Adjust Event Length	Click this button to automatically adjust the event length on the timeline to match the new playback speed, ensuring no frames are cut off.

5. Click OK to apply the effect.

Automatic Event Length Adjustment

After applying slow motion, the clip may no longer fit within its original duration on the timeline. To adjust:

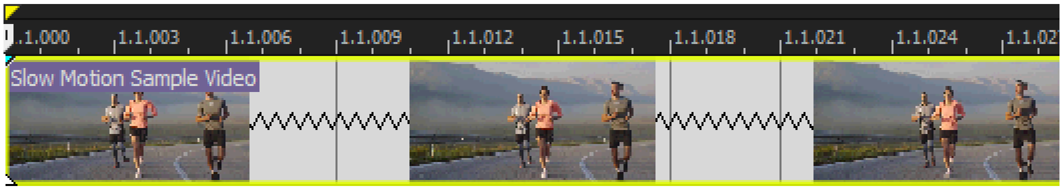
» Click the ADJUST EVENT LENGTH button. This will automatically stretch the event to fit the new playback speed, ensuring all frames are preserved.

Direct Timeline Editing

There are two methods for applying slow motion directly within the timeline:

Adjusting Playback Rate via Event Properties

1. Right-click on the timeline event and choose PROPERTIES.
2. Change the sampling to OPTICAL FLOW.
3. In the PLAYBACK RATE field, adjust the value to achieve the desired speed. A value below 1.0 slows the video down, while values above 1.0 speed it up.
4. Click OK to apply the changes.

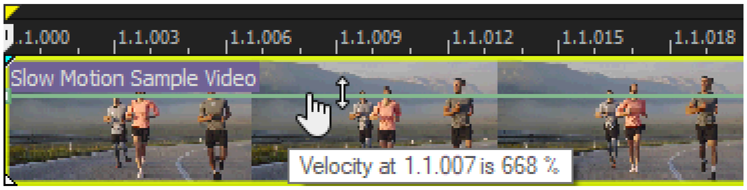


Adjusting Speed via Velocity Envelope

1. Right-click on the timeline event and choose SWITCHES | OPTICAL FLOW as sampling method.
2. Right-click again the timeline event and select INSERT/REMOVE ENVELOPE | VELOCITY.

   A green line will appear over the event.

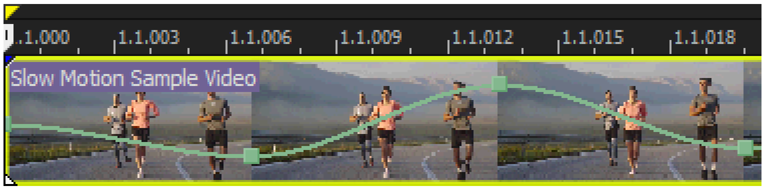
3. Drag this line down to slow the video down, or drag it up to speed it up.


1.1.000
1.1.003
1.1.006
1.1.009
1.1.012
1.1.015
1.1.018
Slow Motion Sample Video

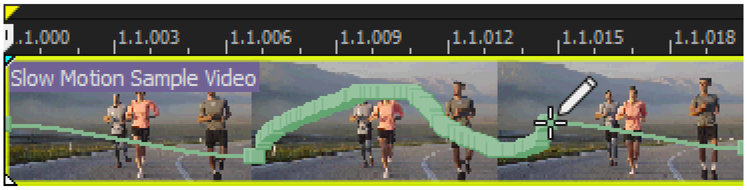
Velocity at 1.1.007 is 668 %

Uneven slow motion effect

- Double-click on the velocity line to add keyframes and create variable speed changes within the event.


1.1.000
1.1.003
1.1.006
1.1.009
1.1.012
1.1.015
1.1.018
Slow Motion Sample Video

- Alternative: Press `SHIFT` key and paint on the event, the drawn curve will be automatically simplified


1.1.000
1.1.003
1.1.006
1.1.009
1.1.012
1.1.015
1.1.018
Slow Motion Sample Video

Spherize

This effect distorts the image as though it were being wrapped around a spherical shape. This gives objects a 3-D appearance.

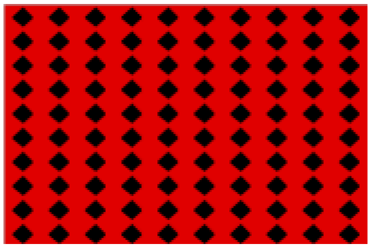


FIGURE *Original*

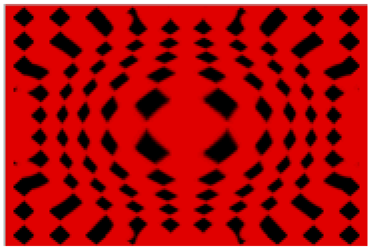


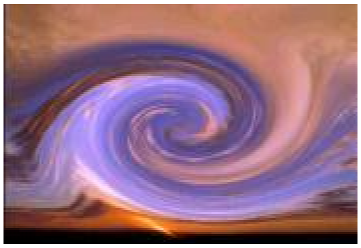
FIGURE *Spherize*

Item	Description
Center	Click the arrow ▶ to show or hide the center controls. Perform one of the following actions to set the center of the effect: - Drag the point in the position box: - Type coordinates in the position box. 0.00, 0.00 represents the lower-left corner of the frame, 0.50, 0.50 represents the center, and 1.00, 1.00 represents the upper-right corner. 0,50; 0,50
Ratio	Determines the amount of deformation. Positive settings produce a convex effect, and negative settings produce a concave effect.
Scaling	Click the arrow ▶ to show or hide the scaling controls. Drag the HORIZONTAL slider to determine the width of the sphere. Drag the VERTICAL slider to determine the height of the sphere. When the PROPORTIONAL checkbox is selected, the vertical and horizontal scaling are proportional based on the HORIZONTAL value. When not selected, vertical and horizontal scaling can be set independently.

Swirl

Twists the image more tightly in the center than at the edges. This can be useful for creating artistic deformation of your video.

Original



Swirl

Item	Description
CENTER	Determines the location of the center of the effect. Drag the square to change the center.
X	Sets the center of the effect on the X axis.
Y	Determines the center of the effect on the Y axis.
RATIO	Controls the degree of swirl applied to the image. Adjusting the amount past zero causes the swirl to change directions.
HORIZONTAL	Determines the width of the swirl.
VERTICAL	Determines the height of the swirl.
PROPORTIONAL	When selected, the vertical and horizontal scaling are proportional based on the value in the Horizontal edit box. When not selected, vertical and horizontal scaling can be set independently.

Threshold

The Threshold filter is used to adjust a video so that it can be used as a mask more effectively. By adjusting the threshold, portions of the video can be made identical making chroma keying and mask generation easier.

Original

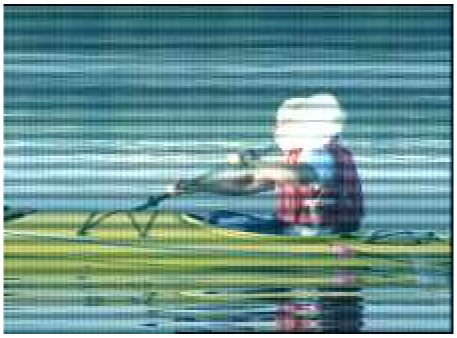
Threshold Effect

TV Simulator

The TV Simulator effect allows you to mimic the appearance of video viewed on a television.

> **TIP** Use the TV Simulator as a transition to simulate channel changes with a rotary dial.

Original



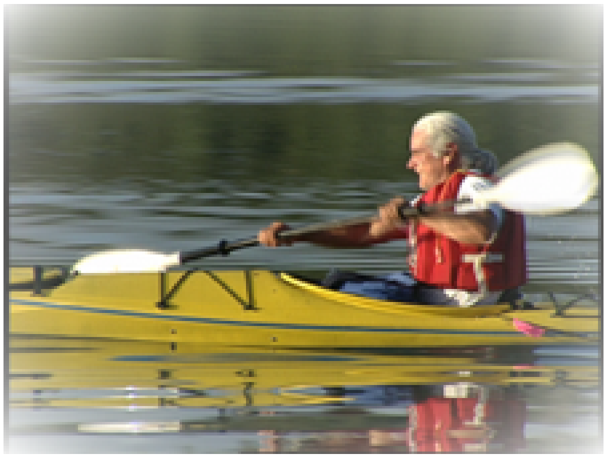
TV Look

Item	Description
Detail Zoom	Drag the slider or type a value in the box to adjust the magnification of the TV simulation. Increasing this setting gives the appearance of viewing a television from close up.
Aperture Grill	Drag the slider or type a value in the box to adjust the appearance of an aperture grill in your video. Increase the setting to make the grill more visible, or decrease the setting to make the grill less visible.
Interlacing	Drag the slider or type a value in the box to adjust the appearance of horizontal interlacing bands. Increase the setting to make the bands more visible, or decrease the setting to make the bands less visible.
Line Sync	Drag the slider or type a value in the box to simulate the distortion and flicker of an improper line sync rate.
Vertical Sync	Drag the slider or type a value in the box to adjust the vertical sync rate of your video. Decreasing this setting simulates a misadjusted horizontal hold control.
Scan Phasing	Drag the slider or type a value in the box to adjust the scan rate of your video. Increasing this setting adds rolling horizontal bands of light to your video.
Phosphorescence	Drag the slider or type a value in the box to adjust the appearance of blue television phosphorescence in your video.
Static	Drag the slider or type a value in the box to add static to your video to simulate poor reception.

Vignette

Use the Vignette effect to soften the borders of your video clip.

Original



Vignette

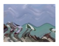
Item	Description
OUTER RADIUS	Drag the slider or enter a value in the edit box to set the size of the vignette.
INNER RADIUS	Drag the slider or enter a value in the edit box to set the size of the center portion of the vignette.
ASPECT	Drag the slider or enter a value in the edit box to set the aspect ratio of the vignette.
CENTER	Enter the coordinates for the center of the effect into the text boxes or drag the circle on the position map to the desired location. Click the arrow ▶ to show or hide the center controls. Perform any of the following actions to set the center of the effect within your project's video frame: ● Drag the point in the position box: ● Type coordinates in the position box.0.00, 0.00 represents the lower-left corner of the frame, 0.50, 0.50 represents the center, and 1.00, 1.00 represents the upper-right corner. 0,50; 0,50
ROTATION	Drag the slider or type a value in the box to set the angle of the vignette.
FEATHER	Drag the slider to determine how smoothly the vignette fades between the OUTER RADIUS and INNER RADIUS settings.

Item	Description
COLOR	Click the arrow ▶ to show or hide the color controls. You can use the color picker, type color values (or names), or use the eyedropper to sample a color from your screen. The color you select will set the color of the vignette border.
INVERT	Select this checkbox if you want the center of the vignette to be solid and the outside of the vignette to be transparent.

Wave

This effect distorts the video either horizontally, vertically or in both directions. You can control the number and height of the waves as well as their position. When animated and combined with a transition, this effect can produce a great dream sequence type effect.

Original



Wave

Item	Description
Vertical/Horizontal waves	This controls the number of waves.
Vertical/Horizontal amplitude	Amplitude means the height of the waves.
Vertical/Horizontal phase	Phase basically sets the position of the waves on the screen.

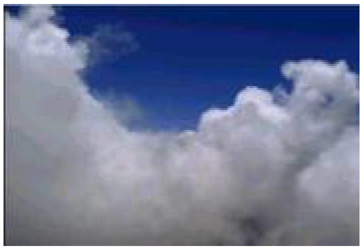
Light Effects

Fill Light

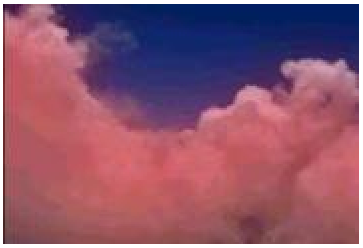
Item	Description
Hue	Selects the hue component of the color used for tinting.
Level	Controls the overall amount of fill light correction.
Deviation	Adjusts the balance of the resulting image. Negative values result in greater illumination of darker regions.
Tint	Adjusts the amount of color cast in the fill light.
Softness	Controls the amount of diffusion in the fill light. Higher values result in more diffusion.

Glow

Apply the Glow effect to create a halo effect around bright objects in a video.



Original



Glow (Red)

Item	Description
GLOW PERCENT	Changes the amount the light radiates (similar to feathering). **NOTE** GLOW PERCENT, INTENSITY, and SUPPRESSION all work together. Make adjustments to each setting to get the desired effect.
INTENSITY	Adjusts the intensity of the glow color.
SUPPRESSION	Drag to suppress the glow so it is applied only to highlights.
COLOR	Click the arrow ▶ to show or hide the color controls. To set the color of the glow effect, you can use the color picker, type color values (or names), or use the eyedropper to sample a color from your screen.

Lens Flare

Use the Lens Flare effect to simulate the light reflections of a camera lens.

***FIGURE** Original*

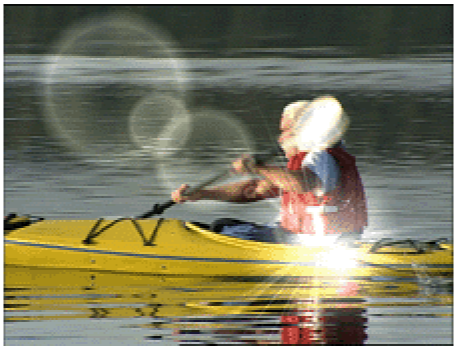


***FIGURE** Lens effect*

Item	Description
Light color	Click the arrow ▶ to show or hide the color controls. You can use the color picker, type color values (or names), or use the eyedropper to sample a color from your screen to choose the color of the light source.
Light Location	Click the arrow ▶ to show or hide the light position controls. Perform one of the following actions to set the position of the light source causing the lens flare effect: ● Drag the point in the position box: ● Type coordinates in the position box. 0.00, 0.00 represents the lower-left corner of the frame, 0.50, 0.50 represents the center, and 1.00, 1.00 represents the upper-right corner. 0,50; 0,50
Lens type:	Choose a lens from the drop-down list to specify the number of flares that will be created.
Tint	Drag the slider or enter a value in the box to adjust the amount of tint that will be applied to the rendered light source.
Intensity	Drag the slider or enter a value in the field to set the strength of the effect.
Blend	Drag the slider or enter a value in the field to set the transparency for the light flare effect. a setting of 0 is completely transparent; a setting of 1 is opaque.
Size	Drag the slider or enter a value in the field to set the size of the light flare effect.

Item	Description
Perspective	Drag the slider or enter a value in the field to set the angle of the light flare effect.

Starburst

Item	Description
Threshold	Determines the luminance level of the source material on which the Starburst effect acts. Higher threshold levels result in less material being affected.
Brilliance	Adjusts the intensity of the highlights. Higher boost results in brighter highlights.
Strength	Adjusts the visibility of the overall effect. Higher values result in more visible highlights.
Radius	Adjusts the length of the highlights. Higher values result in longer highlights.
Points	Controls the number of streaks emanating from the highlight. Higher values result in more streaks.
Center burst	Controls the strength of secondary streaks emanating from the center. The overall effect can be subtle, but becomes more apparent as the value of brilliance increases.
Orientation	Spins the highlights through a 360-degree cycle. Higher values spin the highlights clockwise.
Aspect	Adjusts the width-to-height ratio of the effect in the same way an anamorphic lens compresses an image.
Soften edges	Adjusts the size of the smoothing region along the exterior of the frame. Used for suppressing harsh transitions caused by moving light sources as they enter and leave the frame. Higher values result in a smoother transition but a smaller area of effect
Reduce flicker	Toggles prefiltering of the source material to reduce unwanted flickering in the output.
Effect only	Determines if the source is also displayed in the output of the effect.

Utility Effects

Bézier Masking

Masking is used for two purposes:

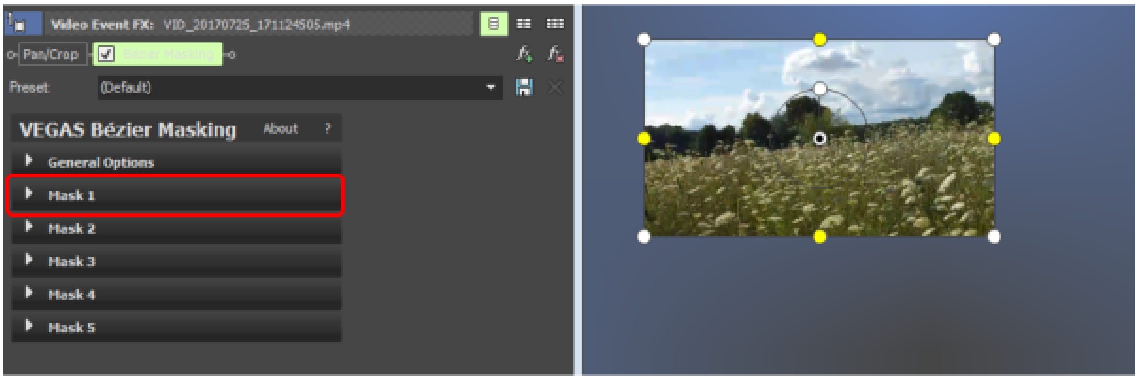
- The mask defines an area of the video that is excluded from the video output so that any video on video tracks below will show through.
- The mask defines an area of the video where an effect is applied, leaving the remainder of the video unaltered .

With the BÉZIER MASKING plug-in you can create up to five masks using simple preset shapes (rectangle, ellipsis, diamond), or complex custom shapes controlled with Bézier drawing tools. You can also apply motion-tracking to have the software automatically move the mask in order to follow an object as it moves through the video frame.

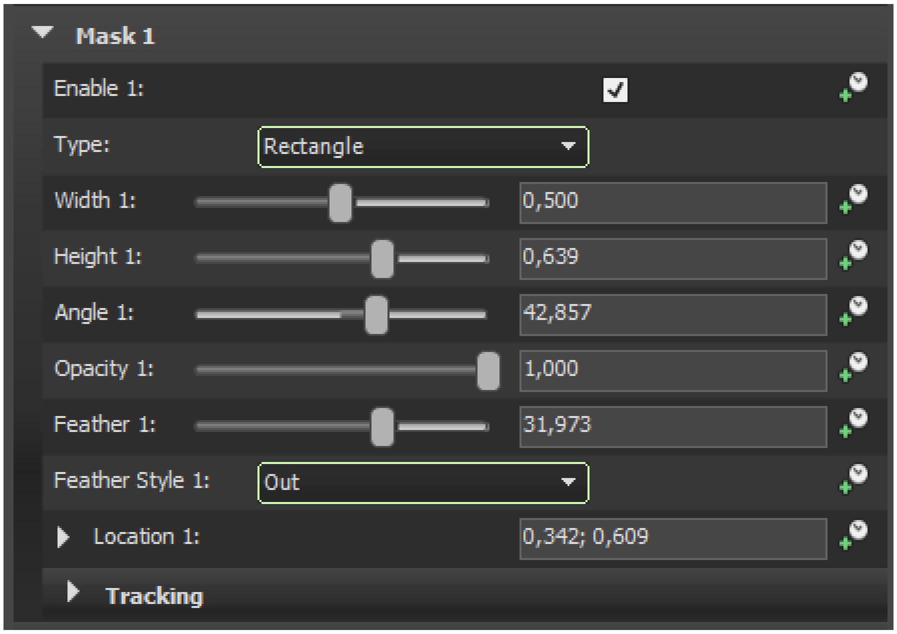
Masking an area

You can mask an area of the video frame so events lower on the timeline will show through:

1. Add the BÉZIER MASKING effect to the video event by clicking on the EVENT FX BUTTON. The effect parameter window opens and a default rectangular mask is created with controls on the preview display.


Video Event FX: VID_20170725_171124505.mp4
Pan/Crop
Bézier Masking
Preset:
(Default)
VEGAS Bézier Masking
About
?
General Options
Mask 1
Mask 2
Mask 3
Mask 4
Mask 5

2. Adjust as desired size, position and rotation of the mask with the controls on the preview display:
   - Click and drag anywhere inside the rectangle to move the mask
   - Click and drag the white handles at the corner to change the size of the mask. The mask is scaled around its center and the aspect ratio is preserved.
   - Click and drag the yellow handles at the sides to change the width or height independently.
   - Click and drag the handle at the circle in the center to change the rotation angle of the mask.
3. The initial mask is part of the MASK 1 section of the Effect parameter panel. Expand the section to further adjust the mask parameters.



Mask 1

Enable 1: ☑

Type: Rectangle

Width 1: 0,500

Height 1: 0,639

Angle 1: 42,857

Opacity 1: 1,000

Feather 1: 31,973

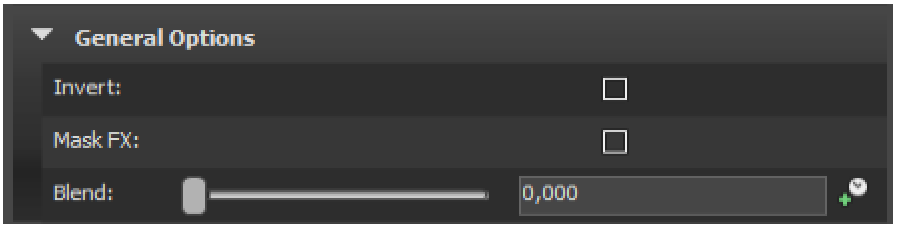
Feather Style 1: Out

Location 1: 0,342; 0,609

Tracking

- ENABLE: Activate/de-activate the mask with this check box. When you want more masks on the event, expand the according MASK 2 to MASK 5sections as desired, and enable the additional masks with this option.
- TYPE: Besides the default RECTANGLE type you can select here the preset forms DIAMOND and OVAL. When you select CURVEuse the Bézier controls to create masks with complex shapes(see below).
- WIDTH/HEIGHT/ANGLE/LOCATION: These values reflect the values of the interactive controls and specific values can be set in these fields..
- OPACITY: Change the opacity of the mask. The default value of 1 produces a totally opaque area outside of the mask shape. Lower the value to let the masked areas become gradually visible.
- FEATHER: Use this parameter to blend the masked and unmasked areas. With FEATHER STYLE you can specify whether the blend starts at the border and moves out of the masked area (OUT), moves into the masked area (IN), or in both directions (BOTH).

General options



General Options

Invert: ☐

Mask FX: ☐

Blend: 0,000

The GENERAL OPTIONS affect all masks:

- INVERT: To invert a mask, check the INVERT option. With this option selected, everything inside the mask is masked out.
- **Mask FX:** Use this option to mask the effects of all plug-in(s) in the effect chain that precede the Bézier mask plug-in rather than the video itself. (See below).
- BLEND: Adjusts the overall impact of the effect: If the effect is used as a mask, increasing this value will increase the transparency of all masks. If the masks are used to mask an effect, the strength of the effect is adjusted.

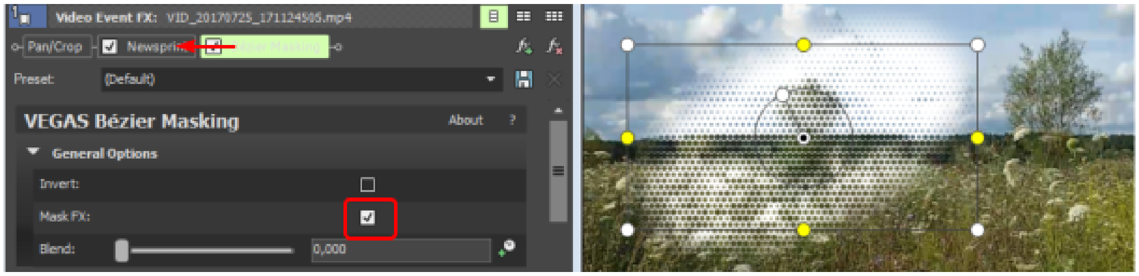
Masking an area to limit the application of other effects

You can use the mask to limit an effect so that it is only present inside the masked area:

1. Add one or more effects to the effect chain.
2. Add the Bézier Masking effect as the last effect in the chain.
3. The default rectangular mask is created and made visible on the preview display.
4. Expand the GENERAL OPTIONS section of the Bézier masking parameter panel and check the MASK FX box.

   > **TIP** The INVERT checkbox can be used if you want to have the effects apply everywhere except the masked area.

5. The preview display now shows that the effects that precede Bézier masking are only applied to the mask area. Edit your mask as necessary in the MASK 1 section (see above).



Video Event FX: VID_20170725_171124505.mp4

Preset: (Default)

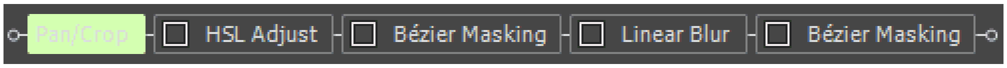
Invert: ☐

Mask FX: ☑

Blend: 0,000

> **NOTE** Note that the Bézier Masking OFX masks **all** of the preceding effects.

This applies also other instances of the Bézier Mask, in other words, if you have more than one mask, everything outside the latest mask is not affected at all.

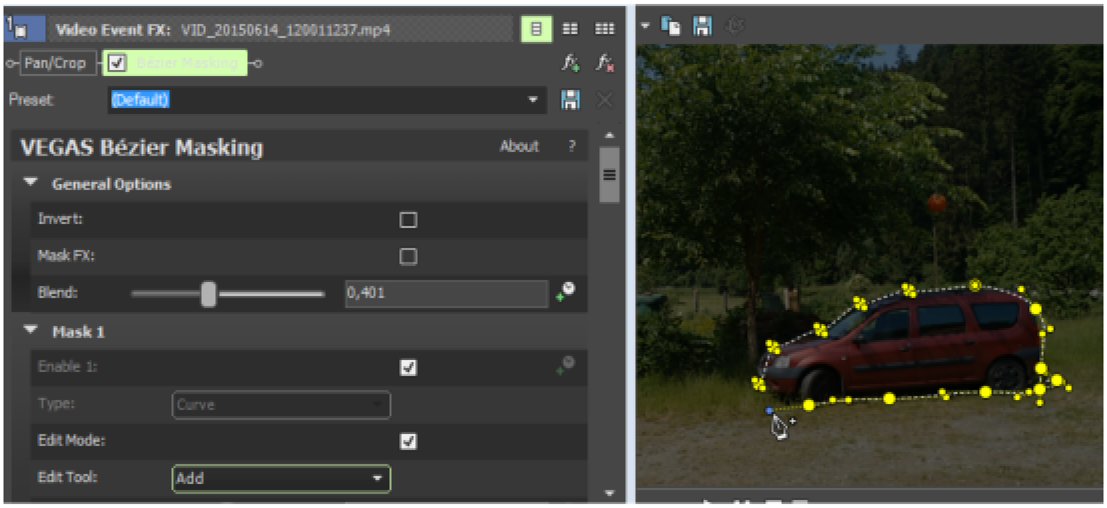

Pan/Crop
☐ HSL Adjust
☐ Bézier Masking
☐ Linear Blur
☐ Bézier Masking

Here a ”wrong color” effect is applied and then masked by the first Bézier masking effect. Then a blur is applied followed by a second Bézier mask. The end result is that only the video inside the second mask is blurred *and* color adjusted. Outside the second mask the color change from the first mask is also masked.

Defining a custom mask shape

Instead of using the preset mask shapes (rectangle, oval, and diamond) you can also create a custom shape by specifying anchor points along the desired edge and setting the angle of tangents at each anchor. (These are the Bézier curves that give the plug-in its name).

1. Add the Bézier masking effect to the video event. The default rectangular mask is created and made visible on the preview display.
2. Expand the MASK 1 section in the effects parameter window and change TYPE to CURVE. The default mask will disappear and “Edit Mode” is activated allowing a new custom mask to be drawn on the preview display.
3. Expand the GENERAL OPTIONS section of the Bézier masking parameter panel and adjust the BLEND value to allow some of the original image to show through for reference.
4. Click and hold the mouse to create an initial anchor point, drag the mouse to orient its tangent, then release the mouse.
5. Choose a new location for another anchor, click and hold the mouse again to create a second anchor point, drag the mouse to orient its tangent, and then release the mouse. Notice that a dashed curve is drawn to represent the edge of the mask between the two anchor points.



Video Event FX: VID_20150614_120011237.mp4

Preset: (Default)

Invert: ☐

Mask FX: ☐

Blend: 0,401

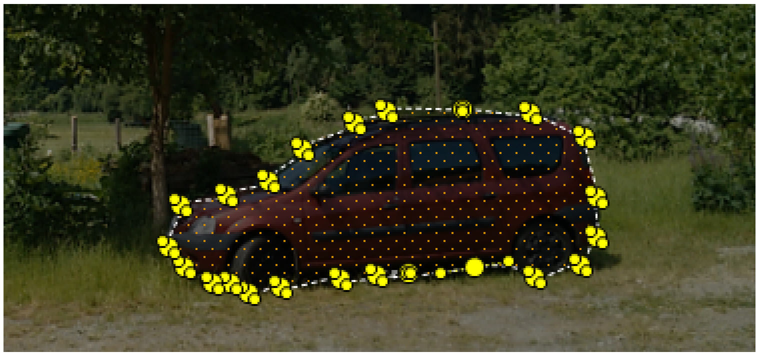
Enable 1: ☑

Type: Curve

Edit Mode: ☑

Edit Tool: Add

6. When all desired anchors have been created, click the initial anchor to complete the closed curve that defines the mask.



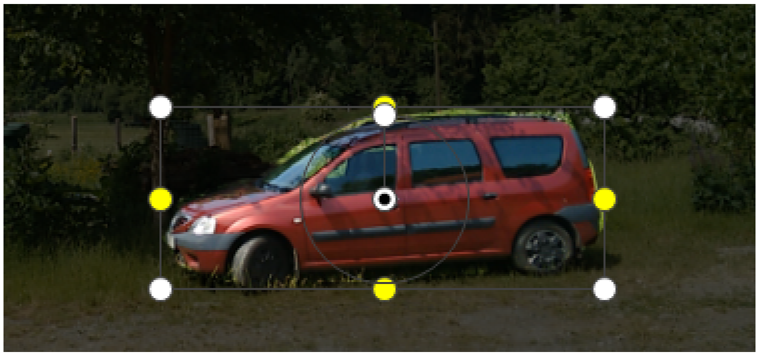
7. The mouse can be used to move anchor points and to reorient tangents.

> **IMPORTANT** You cannot move the initial anchor before closing the curve.

8. While creating the curve or after closing the curve, alternative EDIT TOOLS can be selected from the parameter panel:
   - to move curve segments, anchor points and tangents without (accidentally) adding anchor points, choose NORMAL.
   - to delete anchor points, choose DELETE.
   - to add anchor points, choose ADD.

     > **NOTE** To add a new anchor point between two existing ones the curve has to be closed first.

   - to add anchor points with two independent tangents (to make the curve discontinuous to get pointy corners in the shape) choose SPLIT. You can also adjust the handles of an existing point with the Split tool to split the tangents of that anchor.
9. When finished editing the curve, deselect the EDIT MODE checkbox to return to the normal preview display. The preview display will update to show the custom mask.

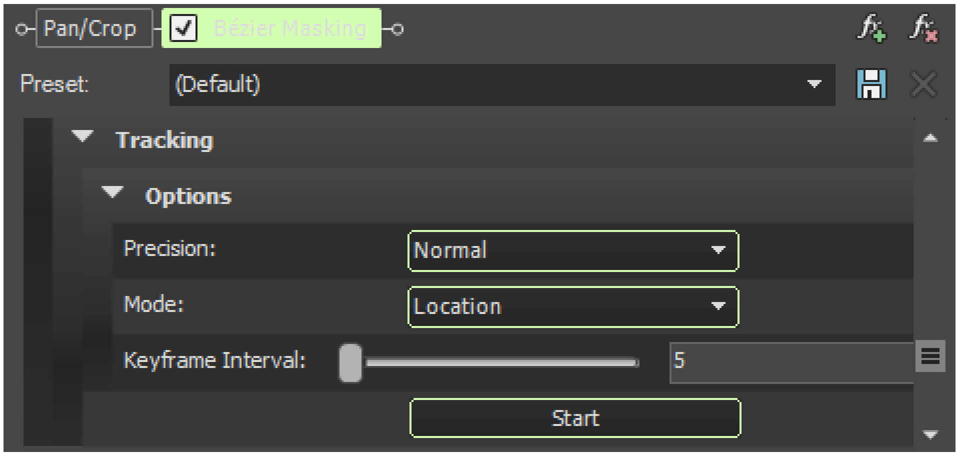


The Interacts on the preview display can now be used to further revise the position, size, or rotation angle of the mask. Rotation & Location Remember to set the Blend Amount back to 1.0 if you want a completely opaque mask.

Motion tracking a mask

Once a mask as been created the mask's position (optionally also its size and rotation) can be set to follow an object in the scene until that object is obscured by other objects in the scene or moves out of view. Use this for instance for blurring a person's face for privacy reasons and let the blur follow the face as it moves through a scene:

1. Add the BÉZIER MASKING effect to the video event. The default rectangular mask is created and made visible on the preview display.
2. Adjust the mask to cover the object to follow.
3. Expand the MASK 1 section, expand the TRACKING sub-section



Preset: (Default)

Precision: Normal

Mode: Location

Keyframe Interval: 5

4. Place the timeline cursor at the point in the event where you want to start the tracking.
5. Click START. A progress box will appear showing the processing time and percent remaining if tracking were to proceed to the end of the video event. Use the CANCEL button to stop tracking when desired.

   If the object being tracked moves out of view, is obscured, or becomes confused with other elements of the scene, tracking may stop automatically. Tracking can be continued by manually advancing the video to a point where the object is visible again, manually moving the mask to the proper position and then clicking START again.

6. The result of the tracking is a keyframe animation of the WIDTH/HEIGHT/ANGLE/LOCATION parameters of the mask. These animation keyframes can be manually revised or deleted to adjust tracking as desired.

Refine the tracking in the OPTIONS section:

- PRECISION: Choose either NORMAL or HIGH from the drop-down menu to specify whether you want to concentrate on faster or more accurate analysis.
- MODE: Specify, if you want to track just the LOCATION of the object, ROTATION & LOCATION or even SIZE, ROTATION & LOCATION. The latter options create ANGLE or ANGLE and WIDTH/HEIGHT keyframes in addition to LOCATION X/Y keyframes. This can help to improve the accuracy of the tracking but could also introduce mistakes so just experiment with these settings to get the optimum result.
- DIRECTION: Here you define the time direction in which the movement is tracked. In addition to the preset direction FORWARD, tracking can also be performed BACKWARDS or in BOTH directions. The advantage is that the reference frame on which you draw the mask does not have to be at the beginning of the movement to be tracked, but can be freely selected. So you can choose the frame where the object to be tracked is best visible, draw the mask there and then select BOTH to capture the entire motion sequence.
- KEYFRAME INTERVAL: This is the number of frames between two keyframes. The lower the number is set, the more accurate the tracking. However, this also creates more keyframes which could make the editing of the animation curve more complicated.

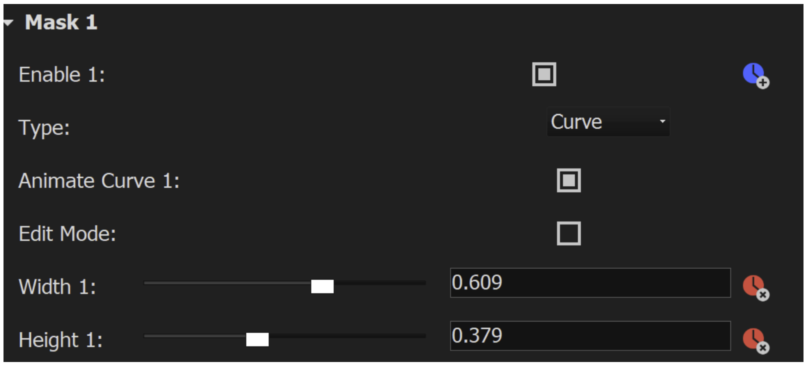
Animation control over individual Bézier mask points

new since VEGAS Pro 23

You can set keyframes to control the shape and position of a Bézier mask at various times. As with other keyframes, VEGAS then animates the settings from one point to the next. With this, you can animate the shape and position of your masks over time.

1 Set up the Bézier Mask

1. Add a video clip with a moving object to your timeline.
2. Open the Video FX window and select "Bézier Masking" from the list of plug-ins.
3. Drag the "Default" preset onto the video event that requires masking.
4. In the Video Event FX window, access the Mask 1 controls by clicking the Mask 1 drop-down arrow.
5. Choose "Curve" from the Type drop-down list.
6. Expand the General Options section and adjust the Blend slider for better visibility of the object to be masked.



Mask 1

Enable 1: ☑

Type: Curve

Animate Curve 1: ☑

Edit Mode: ☐

Width 1: 0.609

Height 1: 0.379

2 Create and edit the Mask

1. Enable Edit Mode by selecting the Edit Mode checkbox.
2. Use the Edit Tool drop-down list to create a mask by manipulating the points over the object in the video.
3. Once the mask is completed, disable Edit Mode by deselecting the Edit Mode check box.

3 Animate the Mask

1. Enable the Animate Curve 1 checkbox to enable animation for the mask.
2. In the animation timeline, ensure the Sync Cursor to Media Timeline option is activated.
3. Navigate to a later point in the animation timeline where you want to modify the mask.
4. Enter Edit Mode by clicking the Edit Mode button.
5. Adjust the points and shape of the mask to match the object's movement.
6. Deselect the Edit Mode checkbox when the modifications are complete.

5 Finalize the Mask Animation

1. Adjust the Blend slider to fully mask out the material outside of the Bézier mask.
2. Close the Video Event FX window and play your project from the beginning of the masked event.
3. Observe the dynamic mask that changes position and shape to align with the object's movement.
4. If necessary, add additional keyframes to further refine the mask's animation and improve the alignment with the object's movement.

Black Restore

Use the Black Restore filter to compensate for irregularities (noise) that can occur near the black end of the color spectrum. Using Black Restore can give better results when you saving your movie to a compressed format.

Drag the THRESHOLD slider to set the Black Restore threshold. Any color with an RGB value less than this value (based on a weighted average) is set to black.

Broadcast Colors

Computer monitors can display sixteen million colors, while televisions display roughly two million colors. This difference means that through editing video on a computer, you can create colors that are out of range for a television display. The visual effects can range from color variations to noticeable ghosting artifacts.

The Broadcast Colors plug-in can be used to adjust luminance and chrominance values for media files, events, or tracks where color may be an issue (especially with titles and still images).

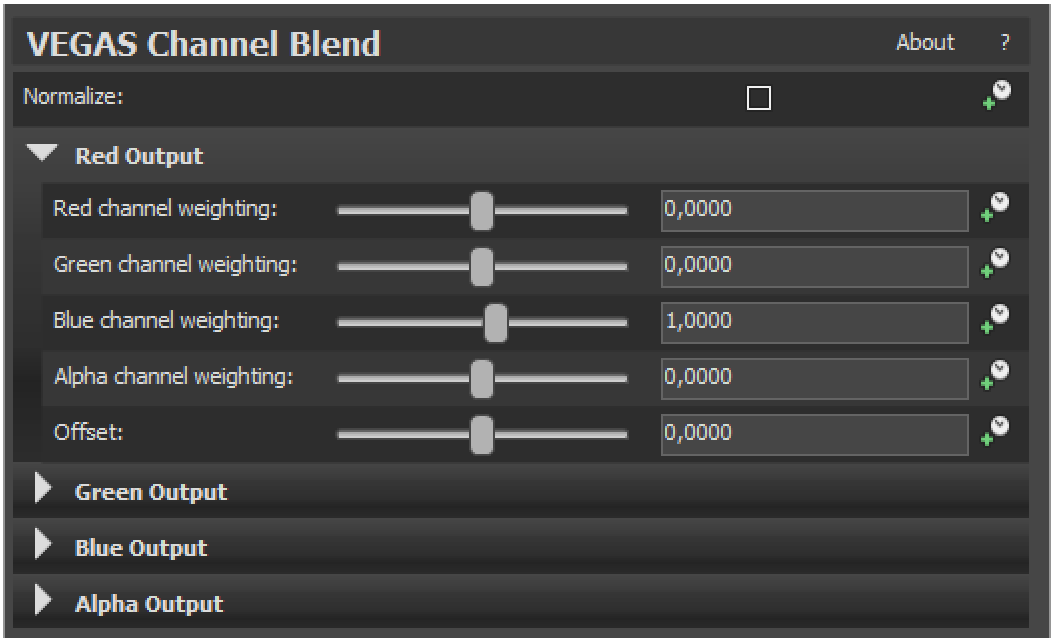
Choose a setting from the PRESET drop-down list or edit the controls as desired:

Item	Description
Luma: min.	Enter the maximum luminance value, and drag the SMOOTHNESS slider to control how smoothly luminance values are blended. Set the slider to 0 to clamp to the value in the MIN box.
Luma: Max.	Enter the maximum luminance value, and drag the SMOOTHNESS slider to control how smoothly luminance values are blended. Set the slider to 0 to clamp to the value in the MAX box.
Chroma: Max.	Enter the maximum chrominance value, and drag the SMOOTHNESS slider to control how smoothly values are blended. Set the slider to 0 to clamp to the value in the MAX box.
Composite: Min.	Enter the minimum composite luma/chroma value, and drag the SMOOTHNESS slider to control how smoothly the composite values are blended. Set the slider to 0 to clamp to the value in the MIN box.
Composite: Max.	Enter the maximum composite luma/chroma value, and drag the SMOOTHNESS slider to control how smoothly the composite values are blended. Set the slider to 0 to clamp to the value in the MAX box.
7.5 IRE Setup	Select this checkbox if you want to set your black to a value of 7.5 as is used in the United States for NTSC video.
Studio RGB (16 to 135)	Select this checkbox if you want to set your RGB color range from 16 (black) to 135 (white).

Channel Blend

The Channel Blend plug-in allows you to manipulate the individual color channels in your video to perform color correction, special effects, channel isolation, or copying the characteristics of one color component to another.

Choose a preset from the PRESET drop-down list or adjust the controls as desired:



Normalize: ☐

Red channel weighting: 0,0000

Green channel weighting: 0,0000

Blue channel weighting: 1,0000

Alpha channel weighting: 0,0000

Offset: 0,0000

There are four sections for the three color channels red, green and blue channel and the alpha channel (transparency). In each section, the values of all channels are mixed (added) together, whereby the channels are multiplied with the setting of the WEIGHTING slider and thus are included in the calculation to a greater or lesser extent in positive or negative values. In the last edit box in each section, you can enter an additional OFFSET to boost or cut the channel overall.

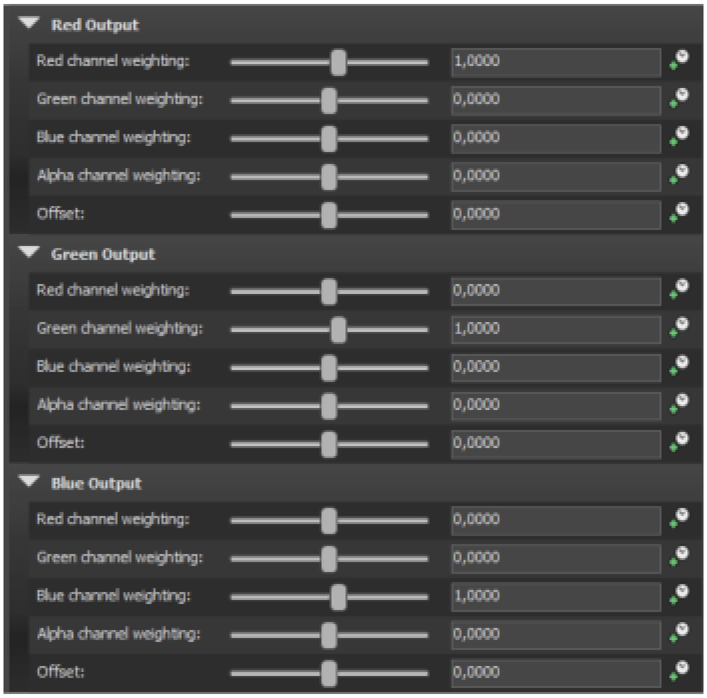
> **NOTE** Select the NORMALIZE checkbox if you want to scale the weights so that their sum total is 1.

The adjustment of the weightings allows you to mix or exchange color channels. For example, if you set the weighting for the red channel in the Red Channel section, you can increase or decrease the red channel. If you adjust the weighting for the red channel in the green or blue channel section, you can add the red channel to the other channels.

You are only limited here by your own creativity. Below are several examples that show you the relationship between the controls.

Default setting: no mixing

FIGURE *Source image*



Red Output

Red channel weighting: 1,0000

Green channel weighting: 0,0000

Blue channel weighting: 0,0000

Alpha channel weighting: 0,0000

Offset: 0,0000

Green Output

Red channel weighting: 0,0000

Green channel weighting: 1,0000

Blue channel weighting: 0,0000

Alpha channel weighting: 0,0000

Offset: 0,0000

Blue Output

Red channel weighting: 0,0000

Green channel weighting: 0,0000

Blue channel weighting: 1,0000

Alpha channel weighting: 0,0000

Offset: 0,0000

By default, in each channel the original channel is multiplied by 1; the other channels are multiplied by 0 and the offset is set to 0, so there is no mixing and the channels retain their original values.

Removing red and green channels

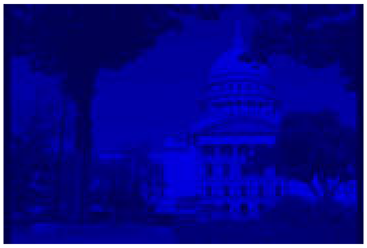
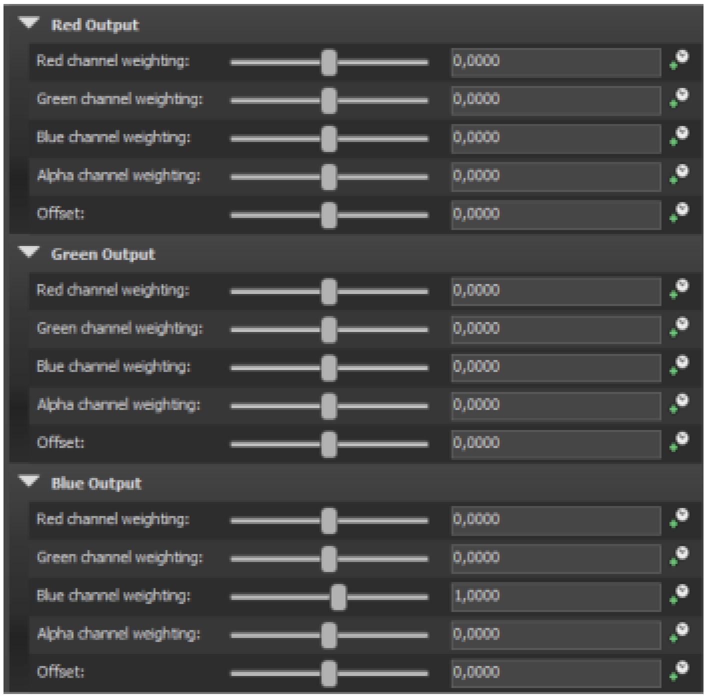


FIGURE *Output*



Red Output

Red channel weighting: 0,0000
Green channel weighting: 0,0000
Blue channel weighting: 0,0000
Alpha channel weighting: 0,0000
Offset: 0,0000

Green Output

Red channel weighting: 0,0000
Green channel weighting: 0,0000
Blue channel weighting: 0,0000
Alpha channel weighting: 0,0000
Offset: 0,0000

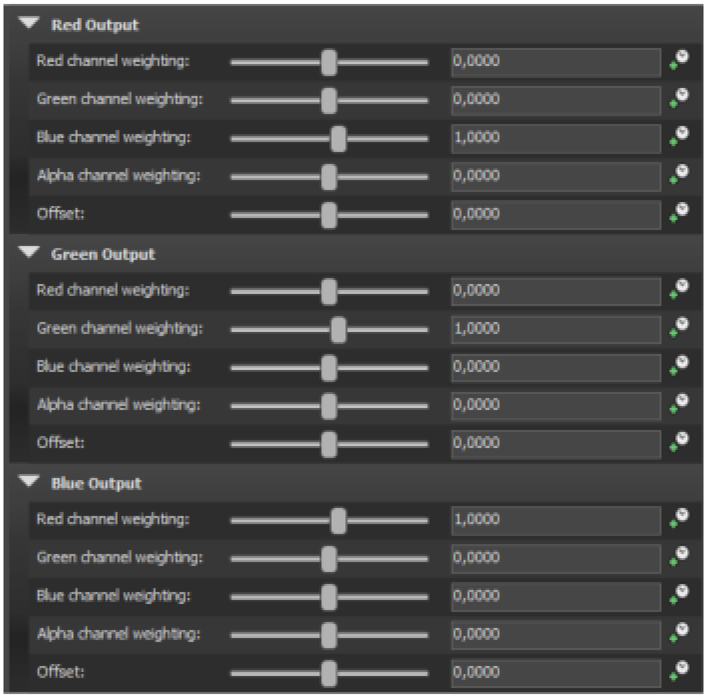
Blue Output

Red channel weighting: 0,0000
Green channel weighting: 0,0000
Blue channel weighting: 1,0000
Alpha channel weighting: 0,0000
Offset: 0,0000

All multipliers for the red and green channels are set to 0, removing those channels from the image. The blue channel is multiplied by 1, and no portion of the red or green channels is added to blue.

Swapping red and blue channels

FIGURE *Output*



Red Output

Red channel weighting: 0,0000
Green channel weighting: 0,0000
Blue channel weighting: 1,0000
Alpha channel weighting: 0,0000
Offset: 0,0000

Green Output

Red channel weighting: 0,0000
Green channel weighting: 1,0000
Blue channel weighting: 0,0000
Alpha channel weighting: 0,0000
Offset: 0,0000

Blue Output

Red channel weighting: 1,0000
Green channel weighting: 0,0000
Blue channel weighting: 0,0000
Alpha channel weighting: 0,0000
Offset: 0,0000

In the red channel, the multiplier for red was changed to 0 and the multiplier blue was changed to 1. The green channel was unchanged. In the blue channel, the multiplier for red was changed to 1, and the multiplier for blue was changed to 0.

Chroma Blur

Use the Chroma Blur plug-in to blur the chromaticity values (color aspect without brightness) of all pixels in an image.

Chroma blur can smooth high-contrast edges in DV clips and helps create smoother masks when using the Chroma Keyer or Color Corrector - Secondary plug-ins.y plug-ins.y plug-ins.y plug-ins.y plug-ins.

Item	Description
HORIZONTAL PIXELS	Drag the slider (or type a value in the boxes) to set the horizontal width of the blur (in pixels).
VERTICAL PIXELS	Drag the slider (or type a value in the boxes) to set the vertical width of the blur (in pixels).

Chroma Key

Chroma key is technology that makes it possible to replace an element of a certain color in a video with another one. This is primarily used in film and television production, for example, to remove a background or insert an object into a different scene. Using Chroma key, you can make a specific colored area in a video transparent and replace it with a new background. This offers a wide range of options for designing creative effects or removing unwanted items from your footage.

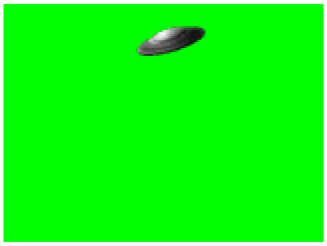


FIGURE *Masked video (on higher track)*

FIGURE *Background (on lower track)*

FIGURE *Chroma Keyer used to make green area in masked video transparent*

Item	Description
Color	Click the arrow ▶ to show or hide the color controls. You can use the color picker, type color values (or names), or use the eyedropper to sample a color from your screen. The color you select will be keyed out.
Sampling tool:	Click on the eyedropper then on the color in the source video (on the timeline) to determine the transparent key color.
Low Threshold	The Chroma Keyer filter creates a mask for each frame.The mask works similar to an alpha channel.Low Threshold allows adjustment of the luminance value of the mask.Anything in the mask with luminance values below this setting become transparent.Combined with the high threshold setting, a range of luminance is created for the mask.
High Threshold	The Chroma Keyer filter creates a mask for each frame.The mask works similar to an alpha channel.High Threshold allows adjustment of the luminance value of the mask.Anything in the mask with luminance values above this setting become opaque.Combined with the low threshold setting, a range of luminance is created for the mask.
Blur amount	This controls how the edges of the key mask are treated.High values allow the mask to blend more smoothly into the background video.
Show Mask Only	Generates a mask from the settings in the dialog.This is identical to using the Mask Generator to create a mask.

Denoise

The VEGAS Denoise plugin allows you to reduce both luminance (brightness) and chrominance (color) noise in video footage. It provides controls for targeted noise reduction and sharpening, making it possible to retain edge detail while enhancing overall video quality. This plugin utilizes a Non-Local Means algorithm, which preserves edges but can be computationally intensive.

USE CASES

- Improving the quality of low-light footage with high noise levels
- Minimizing color noise in high-ISO footage
- Enhancing video clarity by sharpening edges post-denoising

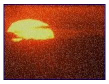


***FIGURE** Original*

***FIGURE** Denoise*

Adjust the Luminance and Chrominance sliders in small increments to avoid overly smooth or artificial-looking results.

Use the Sharpen slider sparingly, as excessive sharpening may introduce artifacts or unnatural edges.

For high-noise footage, consider increasing both sliders moderately for balanced noise reduction and clarity enhancement.

Element	Description
Luminance Slider	Controls the reduction of brightness noise, which often appears as graininess. Adjusting this slider helps smooth out luminance inconsistencies while preserving image details.
Chrominance Slider	Controls the reduction of color noise, often noticeable as random color speckles. This setting is useful for footage with color blotches or high-ISO artifacts.
Sharpen Slider	While the Non-Local Means algorithm retains edge detail, the **Sharpen** slider allows additional sharpening adjustments to make edges appear more realistic after denoising. Increasing this slider enhances edge contrast, which can improve visual clarity, especially in high-resolution videos.

If the denoising process is slow, ensure that your system meets the recommended specifications for VEGAS Pro, as the Non-Local Means algorithm is computationally intensive. Lowering the preview quality may improve performance during editing.

Levels

Levels is a correction filter used to control color and brightness (luminosity) in video. By matching your input source with your output, you can precisely compensate for any difference and standardize your video signals. This is a very effective method of remapping the total range of the colors and improving the overall quality of the video.

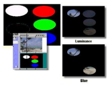
***FIGURE** Original*

***FIGURE** Levels*

Item	Description
CHANNEL	Select the particular color channel (Red, Green, or Blue) or Alpha Channel that you want to adjust or adjust all (which is similar to adjusting the brightness).
INPUT START/END	Use the slider to adjust the brightness or luminosity of the colors in the event as it is captured coming into Vegas.
OUTPUT START/END	Use the slider to adjust the brightness or luminosity of the colors in the event as it is fed out to a preview monitor or back to a camcorder.
GAMMA	Gamma compensates for difference in brightness between different sources and corrects the brightness as viewed on the destination monitor.

Mask Generator

Use the Mask Generator Filter to control the transparency of Video Events that have been placed in the Mask Roll, but it can also be applied to any Video Event. But it can also be applied to any video event. The following illustration demonstrates some of the effects of the Mask Generator. The background image is the original mask. There are five ellipses on the mask: white, red, green, blue and an invisible Alpha Channel (the broken (dashed) line ellipse in the lower left of the mask). Alpha Channels can be based on a color or they can be defined in a paint program that supports Alpha Channel creation. Masks with Alpha Channels must be saved in a format that supports this method of transparency, such as TGA or PNG. As in the following example, the Alpha Channel may be invisible in the actual Mask.



Item	**Description**
Type	Select the method for determining transparency. ● ALPHA: Use the alpha channel to set transparency. ● LUMINANCE: Use Luminance to set transparency. ● RED/GREEN/BLUE: Select a color to set transparency.
Invert	Reverses the transparent and opaque areas in the mask.
Low in High in	Use the two sliders to determine the range of the minimum values of the transparency.
Low out High out	Use the two sliders to determine the range of the highest values of the transparency.

Offset and Wrap

new since VEGAS Pro 23

The VEGAS Offset and Wrap OFX plug-in allows you to apply motion effects to your video images, enabling features like sliding the video in any direction and wrapping the content from one edge to another. You can also tile or mirror the image for additional special effects. This tool works excellently in combination with Adjustment events to create modern and exciting video transitions and other effects.

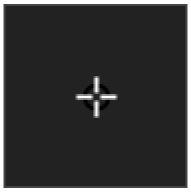
Creative Custom Transitions using Adjustment Events, Offset and Wrap, Linear Blur

Adding Adjustment Event

1. Place two video clips on your timeline, ensuring that the second event overlaps the first event to create a crossfade effect lasting approximately two seconds. This longer duration will make it easier to observe the results.
2. Choose "Insert | Video Track" to add a new video track.
3. With the newly added video track selected, choose "Insert | Adjustment Event".
4. Reposition the adjustment event so that its center aligns roughly with the center of the crossfade on the track below.

Applying Offset Plugin and configuring Wrap Modes

1. Click on the "Video FX" tab and select "Offset and Wrap" from the list of plug-ins.
2. Drag and drop the "Default" preset onto the adjustment event.
3. In the "Video Event FX" window, click on the Expand arrow for the "Offset" parameter control.
4. Adjust the control within the rectangle to define the desired offset angle. Observe the changes in the Video Preview window as you modify the angle. The video wraps around from the right edge to the left as you drag to the right, allowing you to offset the image center.



5. Move the "Count" slider to reduce the video's size, causing tiled images of the video to repeat and fill the video frame.

6. Click the "Wrap Mode" drop-down arrow and set both the "Horizontal Wrap Mode" and "Vertical Wrap Mode" values to:
   - "Off" to create a picture-in-picture effect.
   - "Mirror" to observe the effect
   - "Repeat".
7. Double-click the "Count" slider to restore it to the default value of 1.0.

Creating Movement

1. Double-click the control to reset it.
2. Click the "Animate" button for the "Offset" value.
3. In the keyframe animation timeline, click the "First Keyframe" button to set the initial keyframe.
4. Click the "Last Keyframe" button and enter "1.0, 1.0" in the Offset text box or drag the Angle anchor to the top-right corner of the graph.
5. Place the cursor before the Adjustment event in the main timeline and play the project to observe the image moving at a 45-degree angle towards the top right as the cursor passes through the Adjustment event.

Adding Linear Blur Effect

1. In the Video FX window, select the "Linear Blur" effect from the list of plug-ins.
2. Drag and drop the "45 Degrees" preset onto the Adjustment event.
3. Click the "Animate" button for the "Amount" setting.
4. Create three keyframes in the keyframe animation timeline: one at the beginning, one in the middle, and one at the end of the keyframe controller timeline.
5. Set the two end keyframe values to "0.0" and the middle keyframe value to "1.0".
6. Play your project to witness the final effect of your custom transition.

Timecode

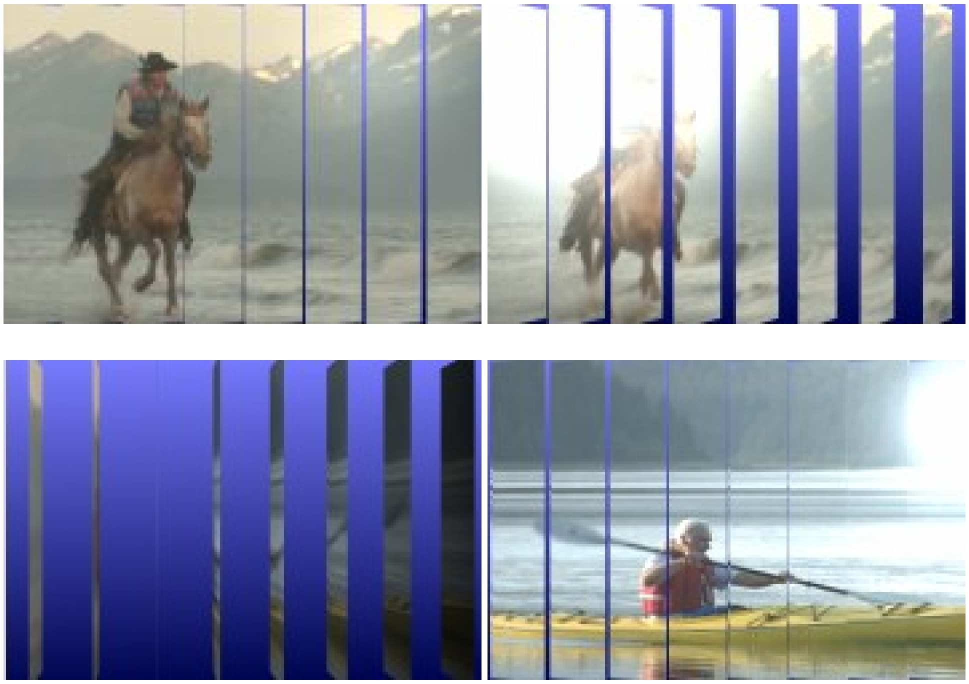
The Timecode plug-in allows you to superimpose running timecode over your video frames. The timecode that will be displayed will match your project time.

Item	Description
Timecode format	Choose a setting from the drop-down list to specify the format that should be used for displaying timecode.
Horizontal alignment Vertical alignment	Choose a setting from the drop-down list to determine where the timecode will be displayed.
Width Height	Drag the slider or enter a value in the box to set the size of the displayed timecode.

Transitions

3D Blinds

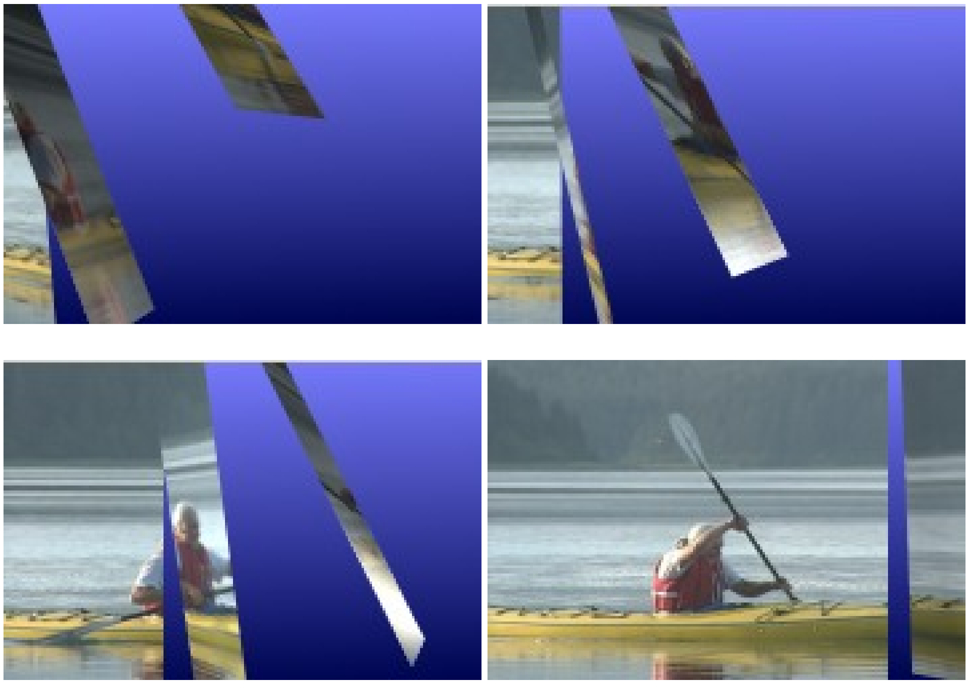
The 3D Blinds transition reveals a video event as if by opening window blinds. Unlike the Venetian Blinds transition, each blind is drawn to simulate a 3D effect.



Item	Description
Sections	Drag the slider or type a value in the box to set the number of blinds the image will be divided into.
Extra Spins	Drag the slider or type a value in the box to set the number of times each blind spins during the transition.
Stagger	Drag the slider or type a value in the box to set the relative position of the blinds during rotation. Set to 0 if you want the blinds to spin together (like a Venetian blind), or increase the setting if you want the blinds to appear to spin independently.
Specular Light	Drag the slider or type a value in the box to set the intensity of light reflected on the surface of the blinds.
Direction	Choose a setting from the drop-down list to establish the orientation of the blinds and direction of the spinning motion.

3D Cascade

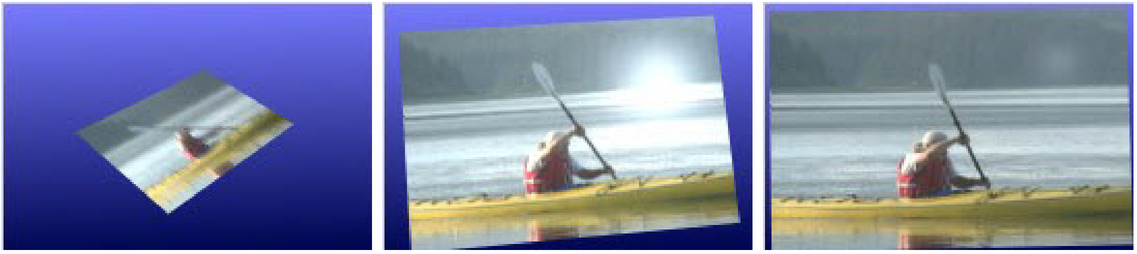
The 3D Cascade transition reveals a video event as if draping it over the previous event much like a segmented Page Roll.



Item	Description
Sections	Drag the slider or type a value in the box to set the number of folds the image will be divided into.
Twist	Drag the slider or type a value in the box to set the angle of the divisions. A setting of 0 is horizontal when the DIRECTION is set to TOP TO BOTTOM or BOTTOM TO TOP or vertical when set to LEFT TO RIGHT or RIGHT TO LEFT.
Specular Light	Drag the slider or type a value in the box to set the intensity of light reflected on the surface of the transition.
Direction	Choose a setting from the drop-down list to establish the orientation of the divisions and direction of the transition.

3D Fly in / Fly out

The 3D Fly-In/ Fly-Out 3D transition reveals a video event by allowing you fly an event in or out from a point in space that you define. You can rotate the event through its flight and add specular light reflected on its surface during flight.



Item	Description
Far X Position	Drag the slider or type a value in the box to set the horizontal position to (or from) which the event flies out (or in).
Far Y Position	Drag the slider or type a value in the box to set the vertical position to (or from) which the event flies out (or in).
Far Z Position	Drag the slider or type a value in the box to set the distance to (or from) which the event flies out (or in).
Rotations (X)	Drag the slider or type a value in the box to set the number of bottom-to-top rotations that will be applied to the event during its flight (top-to-bottom rotations if the Fly In checkbox is selected).
Rotations (Y)	Drag the slider or type a value in the box to set the number of right-to-left rotations that will be applied to the event during its flight (left-to-right rotations if the Fly In checkbox is selected).
Rotations (Z)	Drag the slider or type a value in the box to set the number of counterclockwise rotations that will be applied to the event during its flight (clockwise if the Fly In checkbox is selected).
Specular Light	Drag the slider or type a value in the box to set the intensity of light reflected on the surface of the event.
Fly In/Fly Out	Select the Fly In radio button if you want the second event to fly in to replace the first event. Select the Fly Out radio button if you want the first event to fly out to reveal the second.

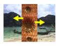
3D Shuffle

The 3D Shuffle transition switches two events in a way that simulates playing cards being shuffled.

Drag the SPECULAR LIGHT slider or type a value in the box to set the intensity of light reflected on the surface of the shuffled events.

Barn Door

This transition effect is a type of wipe transition. The wipe moves in two direction. Video transition "barn doors" however, can move in a number of different directions, in or out.



Item	Description
Orientation	Determines the angle of the transition's movement: horizontal or vertical.
Direction	In: Transition "doors" move inward, from the outside, on the frame. Out: Transition "doors" move outward, from the middle, on the frame.
Borders	The following three controls modify the border, if any, on the effect.
Size	Sets the width of the border.
Feather	Determines how smoothly the border fades into the background.
Color	Use the color boxes to select a color for the border.

Clock Wipe

This effect moves in a circular pattern, either clockwise or counterclockwise.

Original 1

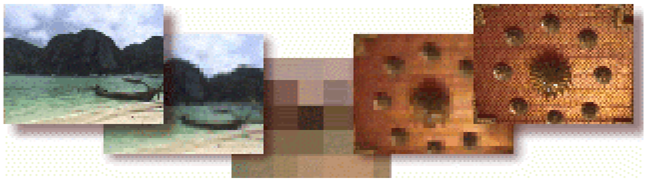
Original 2

Clock Wipe

Item	Description
DIRECTION	Select CLOCKWISE or COUNTERCLOCKWISE.
FEATHER ANGLE	Determines how much of the edge is feathered or softened.

Cross Effect

This transition is a composite effect that uses a crossfade combined with a Zoom, Pixelate or Blur transition. The following illustration shows a Pixelate Cross Effect where the first video gradually becomes more and more pixelated, then crossfades into a pixelated second event, which finally resolves to the second event, thus completing the transition.



Item	Description
Effect	Select the type of transition effect to combine with the crossfade: NONE, ZOOM, PIXELATE, or BLUR.
Apply to	Select which events will be processed by the zoom, blur, or pixelate effect: SOURCE (first event), DESTINATION (second event), or BOTH.
Fade range	Determines the duration of the crossfade that occurs at mid-transition. The fade takes place across the entire transition for a value of 1.
Effect Settings	Displays the effect's parameter controls that set the transition characteristics: ● When ZOOM is selected from the EFFECT drop-down list, use the SOURCE CENTER and DESTINATION CENTER controls to set the center positions of the zoom effect for the source and destination events. Drag the STEREOSCOPIC 3D DEPTH slider to adjust the horizontal alignment of the left- and right-eye views to set the perceived position of the cutout relative to screen depth. ● When PIXELATE is selected from the EFFECT drop-down list, use the MAX X and MAX Y controls to set the maximum amount of horizontal (X) and vertical (Y) pixelation that will be applied during the transition. ● When BLUR is selected from the EFFECT drop-down list, use the MAX BLUR control to set the maximum amount of blur that will be applied during the transition.

Dissolve

Dissolves cause one video event to gradually fade into another video event, with the transparency of one event increasing while the other's transparency decreases until it is completely opaque. Dissolves involving color can also be used to enhance the effect of the transition.

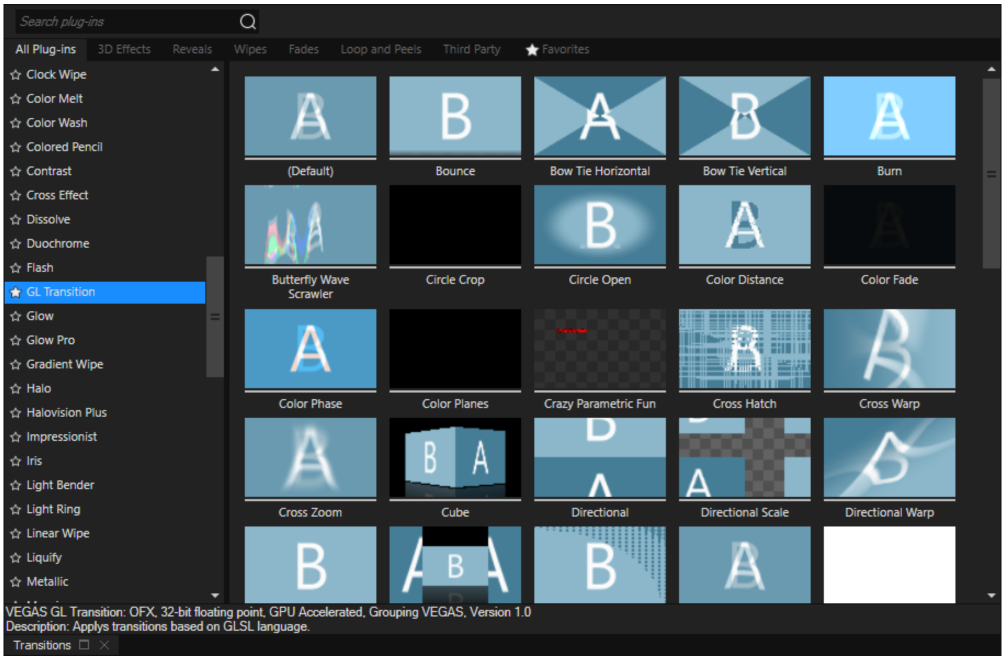
Original 1

Original 2

Additive Dissolve

GL Transitions

The GL Transitions project is an open-source development initiative that aims to establish a universal collection of transitions. The implementation of GL Transitions into VEGAS Pro opens a world of possibilities for modern transition types. You can simply apply these transitions as presets inside VEGAS Pro, or you can customize transitions and even create completely new ones of your own.



Search plug-ins
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Color Wash
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Cross Effect
Dissolve
Duochrome
Flash
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Glow
Glow Pro
Gradient Wipe
Halo
Halovision Plus
Impressionist
Iris
Light Bender
Light Ring
Linear Wipe
Liquify
Metallic
(Default)
Bounce
Bow Tie Horizontal
Bow Tie Vertical
Burn
Butterfly Wave Scrawler
Circle Crop
Circle Open
Color Distance
Color Fade
Color Phase
Color Planes
Crazy Parametric Fun
Cross Hatch
Cross Warp
Cross Zoom
Cube
Directional
Directional Scale
Directional Warp
Transitions

VEGAS GL Transition: OFX, 32-bit floating point, GPU Accelerated, Grouping VEGAS, Version 1.0
Description: Applies transitions based on GLSL language.

How to add one of around 50 existing GL Transition presents:

1. Click the TRANSITIONS tab in the window docking area to bring that window forward.
2. Select GL TRANSITION from the list of transitions on the left.

3. Hover over the various presets on the right to preview them and find the one you want.
4. To apply a transition preset to your project, drag the preset from the Transitions window onto a crossfade between two timeline clip events.
5. The different transitions have unique parameters and controls. Adjust the controls to customize the transition you've added.

How to create a new or customized GL Transition

1. Add the Default preset to your timeline.
2. Enter or paste the code for your custom transition (the code must be written in GLSL) into the code window.

> **TIP** To learn more about the GL Transitions project, visit the GL Transitions website.

> **NOTE**
> Unfortunately, in the initial release of this feature, some users will experience problems including an "Invalid Shader" message. This is related to CPU usage and some Nvidia Gfx graphics cards that don't support OpenCL/OpenGLinterops.
>
> If you experience these problems, you can work around them with this procedure:
>
> 1. Right-click the crossfade on your timeline.
> 2. Choose TRANSITION PROPERTIES from the context menu.
> 3. Use the PLUG-IN-CHOOSER to add the GL Transitions.
> 4. Select the preset you want from the Preset drop-down list in the VIDEO EVENT FX window.

Page Loop

The Page Loop transition creates the appearance of flying one video event in over the next event on a book page.

Item	Description
Paper angle	Drag the slider or enter a value in the box to establish the angle and direction of the page: - 0º produces a vertical, right-to-left loop. - 90º produces a horizontal, bottom-to-top loop. - 180º produces a vertical, left-to-right loop. - 270º produces a horizontal, top-to-bottom loop.
Paper opacity	Drag the slider or enter a value in the box to specify whether the paper loop is opaque or transparent.
Loop radius	Drag the slider or enter a value in the box to specify the radius of the paper loop: - 0 produces a flat edge and creates an effect similar to a wipe. - 1 produces a soft edge for a loop that takes up the entire frame.
Loop position	Drag the slider or enter a value in the box to set the position of the loop on the paper: - 0 positions the loop at the edge of the paper opposite the edge that enters the frame. - 1 positions the loop at the edge of the paper that enters the frame.
Perspective	Drag the slider to scale the looped edge.Drag the slider to the right to make the edge appear closer to the viewer.The effect is more pronounced when using a large LOOP RADIUS setting.

Item	Description
Light color	Click the arrow ▶ to show or hide the color controls. You can use the color picker, type color values (or names), or use the eyedropper to sample a color from your screen. The color you select will set the color of the light that is reflected on the paper loop.

Page Peel

The Page Peel transition creates the appearance of peeling back one video event to reveal the next event.

Item	Description
PEEL ANGLE	Drag the slider or enter a value in the box to establish the angle and direction of the peel: • 0° produces a vertical, right-to-left peel. • 90° produces a horizontal, bottom-to-top peel. • 180° produces a vertical, left-to-right peel. • 270° produces a horizontal, top-to-bottom peel.
FOLD RADIUS	Drag the slider to specify the radius of the peeled edge: • 0 produces a flat edge and creates an effect similar to a wipe. • 1 produces a soft edge for a pronounced peeling effect.
SLIDE AMOUNT	Drag the slider to specify whether the edge of the event opposite the peel is allowed to slide: • 0 anchors the edge. • 1 allows the edge to slide toward the rolling edge.
PEEL OPACITY	Drag the slider to specify whether the peeled edge is opaque or transparent.
PERSPECTIVE	Drag the slider to scale the peeled edge.Drag the slider to the right to make the edge appear closer to the viewer.The effect is more pronounced when using a large FOLD RADIUS setting.
LIGHT COLOR	Click the arrow ▶ to show or hide the color controls. You can use the color picker, type color values (or names), or use the eyedropper to sample a color from your screen. The color you select will set the color of the light that is reflected on the peeled page.

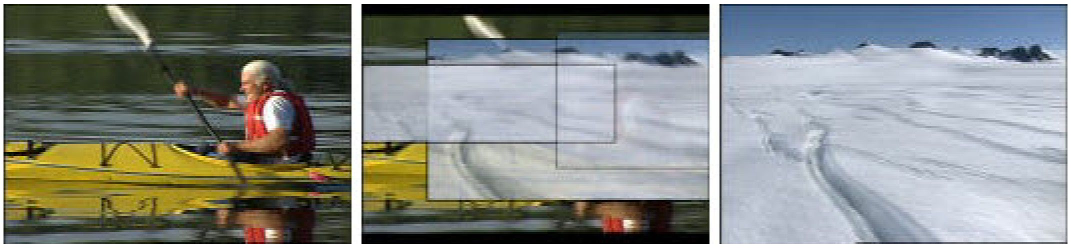
Page Roll

The Page Roll transition creates the appearance of rolling back one video event to reveal the next event.

Item	Description
ROLL ANGLE	Drag the slider or enter a value in the box to establish the angle and direction of the roll: • 0º produces a vertical, right-to-left roll. • 90º produces a horizontal, bottom-to-top roll. • 180º produces a vertical, left-to-right roll. • 270º produces a horizontal, top-to-bottom roll.
FOLD RADIUS	Drag the slider to specify the radius of the rolled edge: • 0 produces a flat edge and creates an effect similar to a wipe. • 1 produces a soft edge for a pronounced rolling effect.
SLIDE AMOUNT	Drag the slider to specify whether the edge of the event opposite the roll is allowed to slide: • 0 anchors the edge. • 1 allows the edge to slide toward the rolling edge.
ROLL OPACITY	Drag the slider to specify whether the rolled edge is opaque or transparent.
PERSPECTIVE	Drag the slider to scale the rolled edge.Drag the slider to the right to make the edge appear closer to the viewer.The effect is more pronounced when using a large FOLD RADIUS setting.
LIGHT COLOR	Click the arrow ▶ to show or hide the color controls. You can use the color picker, type color values (or names), or use the eyedropper to sample a color from your screen. The color you select will set the color of the light that is reflected on the rolled page.

Portals

The Portals transition creates the appearance of flying one video event in over the next event.



Item	Description
Random Pattern Seed	Type a value in the box to set a seed value that is passed to the random number generator to determine the pattern in which the portals are drawn.
Squares	Drag the slider or enter a value in the box to specify how many squares, or portals, you want the transition to create.
Max Transparency	Drag the slider or enter a value in the box to set the maximum transparency of the squares the transition creates: ● 0 produces completely transparent squares. ● 1 produces opaque squares.
Max Offset	Drag the slider or enter a value in the box to set the maximum amount the image in the portals can be offset from their original position.
Max Scale	Drag the slider or enter a value in the box to set the maximum amount of scaling that can be applied to the images within the portals: ● 0 applies no scaling; the image will appear at the same size in the portal and the original video frame. ● 1 applies the maximum magnification.
Border Size	Drag the slider to set the width or the border around each square.
Border Color	Use the color boxes, drag the RGB sliders, or use the color picker to set the color of the border around each square.

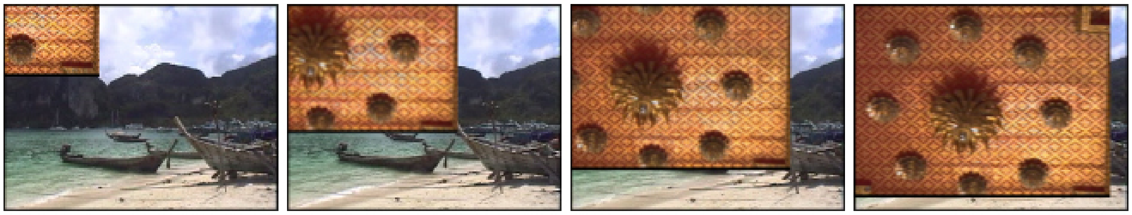
Push

At first glance, Push and Wipe transitions look very similar. In a Wipe transition, a line moves across the video, revealing the second video, which was always below the first and is unmoving. In a Push, on the other hand, the second video itself moves onto the screen as the first one moves off.

Item	Description
direction	Select the direction for the transition to progress from: Up Down, Left, or Right.
Push off previous image	The first video pushes the second video off of the screen when this is selected. When not selected, the second video merely slides over the first, with the first remaining unmoved.
Borders	The following three control the border, if any, on the effect.
size	This sets the width of the border.
Feather	Feather determines how smoothly the border fades into the background.
Color	Use the color boxes to select a color for the border.

Slide

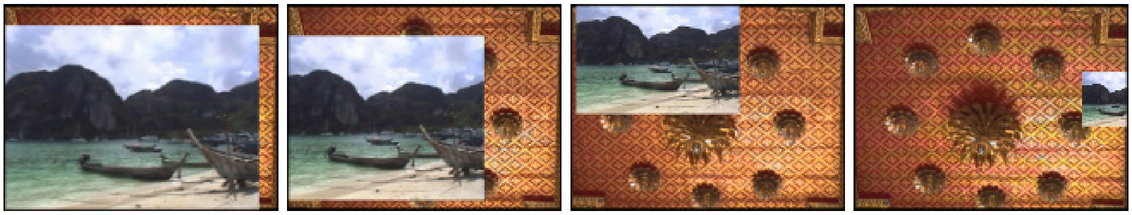
In this transition event two slides over event one (Slide In) or event one slides away off screen, revealing event two (Slide Out).



Item	Description
Angle	Determines the angle of the transition's movement.
direction	Slide in: event two slides in over event one. Slide-Out: event one slides away off screen.
Borders	The following three controls modify the border, if any, on the effect.
size	Sets the width of the border.
Feather	Determines how smoothly the border fades into the background.
Color	Use the color boxes to select a color for the border.

Spiral

This transition uses a circular sliding motion to exchange the events. The events can also appear to zoom in or out during the transition. The following illustration shows a Spiral Out effect that zooms out to 0.



Item	Description
Turns	Determines the number of rotations the transition undergoes before the effect is completed.
zoom	Determines the level of magnification at the start/finish of the transition from 0 (minimum size) to 1 (full size).
Orientation	Determines the starting position of the spiral: left, right, up or down.
Movement:	Determines the direction of the circular component of the spiral motion: counterclockwise or clockwise.
direction	Spiral In: event two spirals in from the outside, covering up event one. Spiral out: event one spirals away towards the center, revealing event two.
Borders	The following three controls modify the border, if any, on the effect.
size	Sets the width of the border.
Feather	Determines how smoothly the border fades into the background.
Color	Use the color boxes to select a color for the border.

Split

One of the transitioning events is split apart into four sections and gradually cover, or reveal, the other event. The illustration uses Split Mode Squeeze and Direction: In.

Item	Description
Center	Determines the central offset of the transition. Drag the circle to move the center.
Split Mode	Possible modes: Push, Wipe, or Squeeze. See the illustration accompanying the Linear Wipe transition's explanation for more information.
direction	Out: event one splits to reveal event two. In: event two slides in and over event one.
Borders	The following three controls modify the border, if any, on the effect.
size	Sets the width of the border.
Feather	Determines how smoothly the border fades into the background.
Color	Use the color boxes to select a color for the border.

Squeeze

The Squeeze Transition is similar to Push and Linear Wipe. During the Squeeze Transition however, the entire contents of both videos is visible for the duration of the effect. In the image below, that transition has progressed almost half way. Each frame has been compressed horizontally and "squeezed" into half of the screen. The second video, coming in from the left, gradually becomes uncompressed while the first outgoing video is squeezed until it is gone.

Original 1

Original 2

Squeeze

Item	Description
Start	Select whether the effect will start from the Top or Bottom, Left or Right, or emerge from the Center either Horizontally or Vertically.
Squeeze previous image	When selected, the first video will squeeze the second video off of the screen. When not selected, the second video merely slides over the first, with the first remaining undistorted.
Borders	Adds a border to the effect.
size	Sets the width of the border.
Feather	Determines how smoothly the border fades into the background.
Border Color	Select a color for the border from the color boxes.

Star Wipe

Item	Description
Arms	Drag the slider or type a value in the edit box to specify the number of arms for the star.
Ratio	Sets the length of the star arms: drag left to increase the arm length, or drag right to decrease arm length.
Angle	Rotates the star within your video frame.
Feather	Determines how smoothly the star fades into the background.
Borders	Sets the width of the star's border
Border Color	Sets the color of the star's border
Center	Sets the center of the star within the video frame.
Cycles	Drag the slider to set the number of concentric stars that will be used to form the transition.
Waveform	Choose a setting to establish the direction of the transition.
Flip horizontal Flip vertical	Select these check boxes to mirror the star shape in the video frame.
Flip horizontally Flip vertically	Select this checkbox to mirror the star shape on the corresponding axis. If you're working with a star shape that is not centered in the frame, you can use mirroring to create multiple star shapes.
direction	Sets the direction of the transition: choose FORWARD if you want the star to grow through the transition, or choose REVERSE if you want the star to shrink through the transition.

Swap

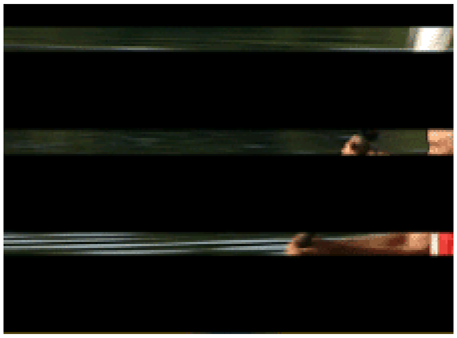
Event one slides out of the way and changes places with event two which comes to the forefront.

Item	Description
Direction	Determines the initial direction that event one takes during the swap.
Borders	The following three controls modify the border, if any, on the effect.
Size	Sets the width of the border.
Feather	Determines how smoothly the border fades into the background.
Color	Use the color boxes to select a color for the border.

Venetian Blinds

The Venetian Blinds transition reveals a video event as if by opening window blinds.

Original



Horizontal Venetian Blinds

Item	Description
Angle	Drag the slider (or enter a value in the box) to set the angle of your blinds: 0 is a vertical blind; 90 is a horizontal blind.
Feather	Drag the slider (or enter a value in the box) to soften the edge of each blind: 0 is a hard edge; 1 is the maximum feathering value.
Number of Blinds	Drag the slider (or enter a value in the box) to specify the number of blinds that you want to use.

Warp Flow

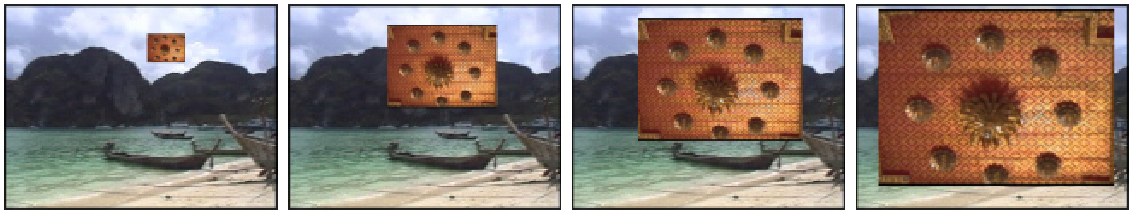
This transition creates interesting warping or morphing effects between two different video clips. The end frame of the first event and the beginning frame of the second event are analyzed to find similar corresponding points, and additional video frames are synthesized between the actual frames to create a sequence in which the first frame seems to flow or grow to become the second frame. This can be used for special effects and sequences with a science fiction feel.

There are no specific parameters to be adjusted in this transition.

> **NOTE** This transition is automatically applied when you perform a Smart Split on a video event.

Zoom

The second video appears on top of the first as a point at the beginning of this effect and gradually expands to cover the entire screen.



Item	Description
CENTER	Drag the circle on the location map to determine the starting point of the effect.
STEREOSCOPIC 3D DEPTH	In Stereo3D projects you can control the depth of the zoom.
BORDERS	The following three controls modify the border, if any, on the effect.
SIZE	Sets the width of the border.
FEATHER	Determines how smoothly the border fades into the background.
COLOR	Use the color boxes to select a color for the border.

Flash

The Flash transition inserts a camera-like flash between two video events. You can specify the color of the light.

Item	Description
Horizontal Diffusion	Drag the slider or enter a value in the edit box to specify how much the flash is allowed to diffuse on the horizontal axis.
Vertical Diffusion	Drag the slider or enter a value in the edit box to specify how much the flash is allowed to diffuse on the vertical axis.
Color Sliders	Use these color controls to select the color of the flash.
RGB/HSL	Click to switch the color swatches from Red, Green, and Blue values to Hue, Saturation, and Luminance.
Sampling tool:	Click on the eyedropper then on the color in the source video (on the timeline) to determine the color of the flash.

Gradient Wipe

The Gradient Wipe transition uses a gradient image as a transition between two video events

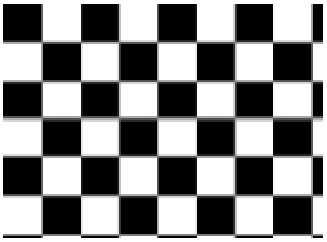


FIGURE *Original 1*

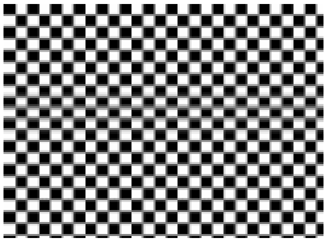


FIGURE *Original 2*

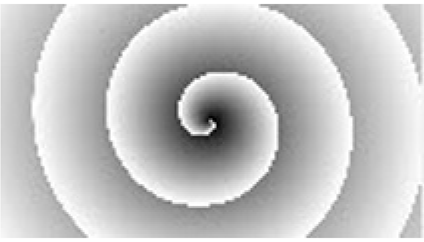


FIGURE Gradient Image

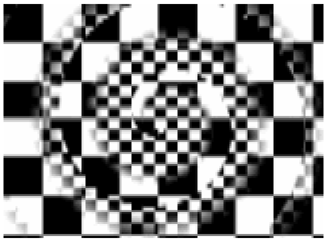


FIGURE Gradient Wipe

Item	Description
Flip horizontally	Select this checkbox if you want to flip the gradient image from left to right.
Vertical	Select this checkbox if you want to flip the gradient image from top to bottom.
Horizontal	Select this checkbox if you want to mirror the left half of the gradient image.
Flip vertically	Select this checkbox if you want to mirror the top half of the gradient image.
Search	Click to choose a gradient image that you want to use as a transition. Grayscale images produce the best results: The transition will begin in the dark areas of the image and progress to the light areas.
Threshold Blend	Drag the slider to adjust the transition fade: Drag the slider to the left to create a sharper leading edge between the two video events and to the right to create a softer leading edge.
Gradient Blur	Drag the slider to soften the transition by blurring: Drag the slider to the left to make the transition sharper overall, to the right to make it smoother.
direction	Select the Forward radio button if you want the transition to begin in the dark areas of the gradient and progress to the light areas. Select the Reverse radio button if you want the transition to begin in the light areas of the gradient and progress to the dark areas.
Maintain Aspect Ratio	Select this checkbox if you want to maintain the aspect ratio of the gradient image. When the checkbox is selected, the gradient image will be scaled proportionally to fit your project frame, and the edges of the gradient may be cut off. When the checkbox is cleared, the gradient image is stretched to fill the frame, which can distort your gradient.

Item	Description
Auto Contrast Stretch	Select this checkbox if you want to adjust the contrast of gradient images to ensure that the gradient has at least one all-black pixel and one all-white pixel. When this checkbox is not selected, your transition may not begin and end on the first and last frames of the transition.

Iris

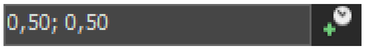
Use the Iris Transition to select a default shape for the transition as it grows from one Event into another.The shape can be repeated in rows and columns and surrounded by a border.The transition may be used as a mask to create a video window by using keyframe animation techniques to freeze the transition.

Original 1

Original 2

Iris transition

(Shape=Triangle, Border =.03, Repeat X=2) =2))

Item	**Description**
COLOR	Click the arrow ▶ to show or hide the color controls. You can use the color picker, type color values (or names), or use the eyedropper to sample a color from your screen.
CENTER	Enter the coordinates for the center of the effect into the text boxes or drag the circle on the position map to the desired location. Click the arrow ▶ to show or hide the center controls. Perform any of the following actions to set the center of the iris effect within your project's video frame: ● Drag the point in the position box: ✛ ● Type coordinates in the position box.0.00, 0.00 represents the lower-left corner of the frame, 0.50, 0.50 represents the center, and 1.00, 1.00 represents the upper-right corner.  0,50; 0,50
STEREOSCOPIC 3D DEPTH	Drag the slider to adjust the horizontal alignment of the left- and right-eye views to set the perceived position of the video relative to screen depth.
SHAPE	Sets the shape of the Iris.
DIRECTION	Select the direction to make the iris appear as if it is closing to the or opening during the transition.
FEATHER	Determines how smoothly the border fades into the background.

Item	Description
BORDERS	Determines the size of the border in pixels.
REPEAT X REPEAT Y	REPEAT X: The number of times the shape is repeated across the image from left to right (columns) REPEAT Y: The number of times the shape is repeated from top to bottom (rows).

Linear Wipe

Use the Linear Wipe Transition to proceed from any angle across the screen. Set a wider feathered edge for a less harsh and more smooth transition.

FIGURE *Original 1*

FIGURE *Original 2*

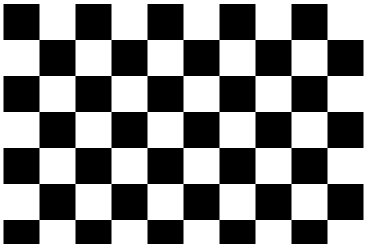
FIGURE *Linear Wipe*

Item	Description
Angle	Sets the angle of the wipe.
Feather	Determines how much of the edge is feathered or softened.

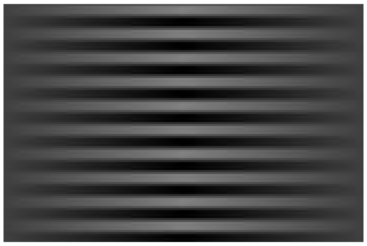
Media Generators

Checkerboard

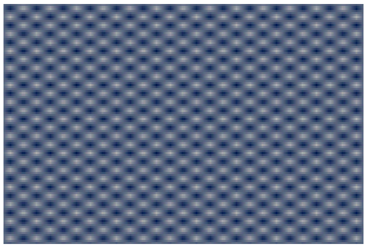
The Checkerboard generator can create checked and striped patterns.



Large Tiles Preset



Ridges Preset



Bumps Preset

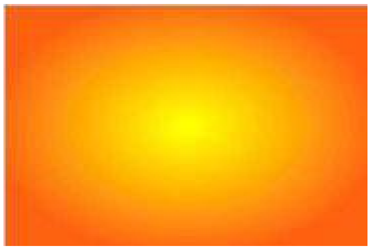
Item	Description
Tile dimensions	Drag the Width and Height sliders or enter values in the boxes to establish size of the tiles that make up your checkerboard. Select the Square checkbox to force the width and height to match.
Edge blending	Drag the Horizontal and Vertical sliders or enter values in the boxes to feather the edges of the tiles to create a rounded appearance. Select the Proportional checkbox to force the horizontal and vertical settings to match.
Color 1 Color 2	Click the arrow ▶ to show or hide the color controls. You can use the color picker, type color values (or names), or use the eyedropper to sample a color from your screen.
Grid offset	Drag the sliders or type values in the X and Y boxes to offset your checkerboard in the frame.

Color Gradient

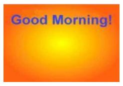
Color Gradient provides an interesting variety of colored events to be used for backgrounds behind overlays or graphics with transparency or for fades.

Good Morning!

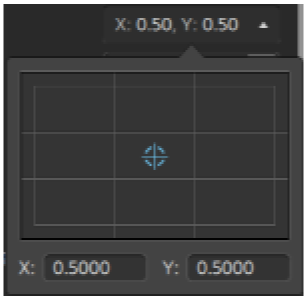
Original

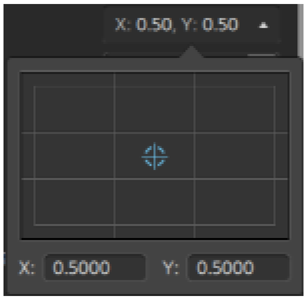


Color gradient


Good Morning!

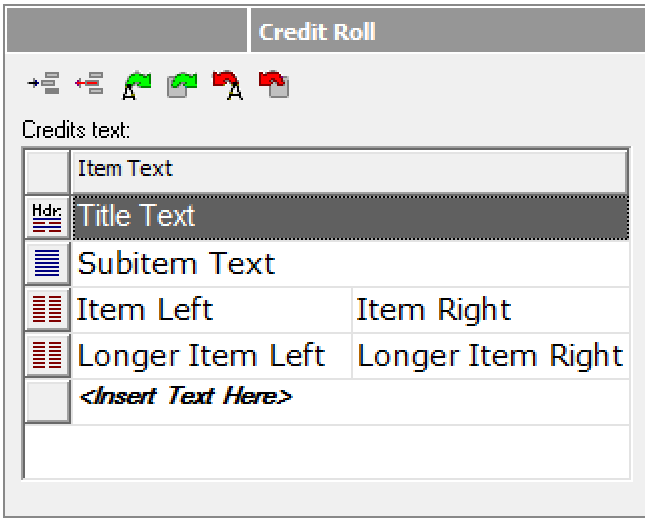
Original + Color Gradient

Item	Description
TYPE	Choose a setting from the drop-down list to choose the shape of the gradient.
CENTER	The drop-down list displays the current position of the gradient in the frame. Click to display an edit control you can use to position the gradient.  X: 0.50, Y: 0.50 X: 0.5000 Y: 0.5000 You can drag the point in the edit control or type values in the X and Y boxes to set the position of your control point in the frame. Double-click the point to reset it. **TIP** Hold Ctrl (Windows) or ⌘ (OS X) to adjust the point in fine increments.
ANGLE	Type a value in the box or drag the slider to adjust the angle of the line formed by the control points in relation to a horizontal plane.
CONTROL POINT	
DISTANCE	Type a value in the box or drag the slider to adjust the distance of the control point from the center.

Item	Description
POSITION	The drop-down list displays the current position of the control point in the frame. Click to display an edit control you can use to position the point.  X: 0.50, Y: 0.50 X: 0.5000 Y: 0.5000 You can drag the point in the edit control or type values in the X and Y boxes to set the position of your control point in the frame. Double-click the point to reset it. **TIP** Hold Ctrl (Windows) or ⌘ (OS X) to adjust the point in fine increments.
COLOR	Click the color sample to display a color picker, where you can choose the color you want to display at the selected control point.
REMOVE	Removes the selected control point.
ADD	Adds a new gradient control point.

Credit Roll

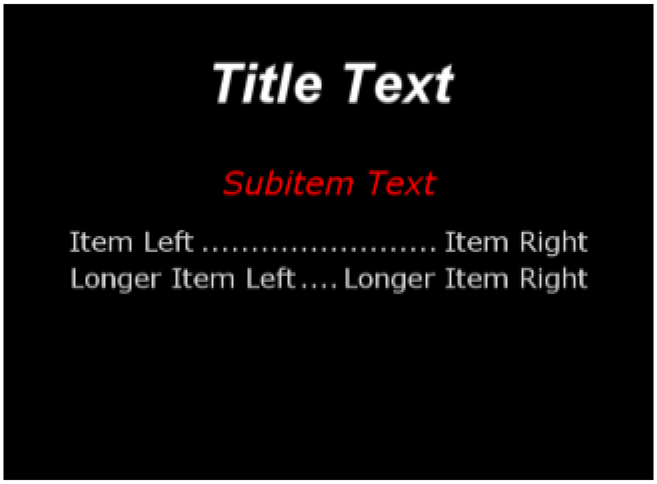
Use Credit Roll to add credits to your video project. Enter the text you want to display in the Credits Text area, and use the Properties and Styles tabs to adjust the appearance of the text.



Credit Roll

Credits text:

	Item Text	
Hdr	Title Text	
	Subitem Text	
	Item Left	Item Right
	Longer Item Left	Longer Item Right
	<Insert Text Here>	



Title Text

Subitem Text

Item Left .... Item Right

Longer Item Left .... Longer Item Right

TIP To display text over a video event, place the generated media event on a track above the video.

The Credit Roll toolbar

Use the Credit Roll toolbar to add and delete rows, import text and properties, and export text and properties.

Button	Description
→☰	Insert a row in the Credits Text pane.
←☰	Delete one or more selected rows.
↶A	Import credit roll text from a .txt file. If you've selected rows of text, the selected rows will be replaced with the imported text. If no text is selected, the imported text will be added to your credit roll. **TIP** Tips for creating a text file: ● Begin a line with two slash marks to write a comment that will not be included in your credit roll. ● Precede title text with a space. ● Subitem text does not begin with a space. ● Two-column text does not begin with a space, and the columns are separated by a Tab character. ● If you need to include leading spaces in an entry, use quotation marks.
↶▢	Import credit roll text properties from a .xml file.
↷A	Export credit roll text to a .txt file.
↷▢	Export credit roll text properties to an .xml file.

The Credits Text pane

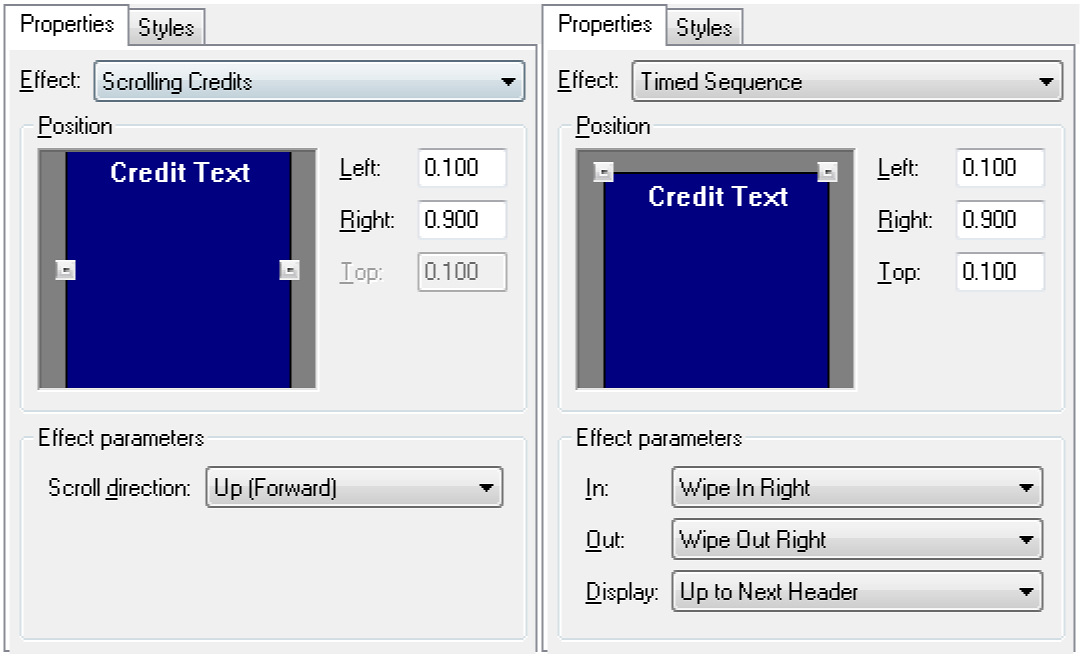
Click within the ITEM TEXT boxes to type the text you want to display.

To add a new item, click in the <Insert text here> box and start typing. A new row is created at the bottom of the credit roll.

> **TIP** Click the STYLE SELECTION BUTTON and choose a setting to adjust the number of columns that are displayed.

The Properties tab

Use the Properties tab to control the appearance and placement of your credits in your project.


Properties
Styles
Credit Text
Position
Effect parameters

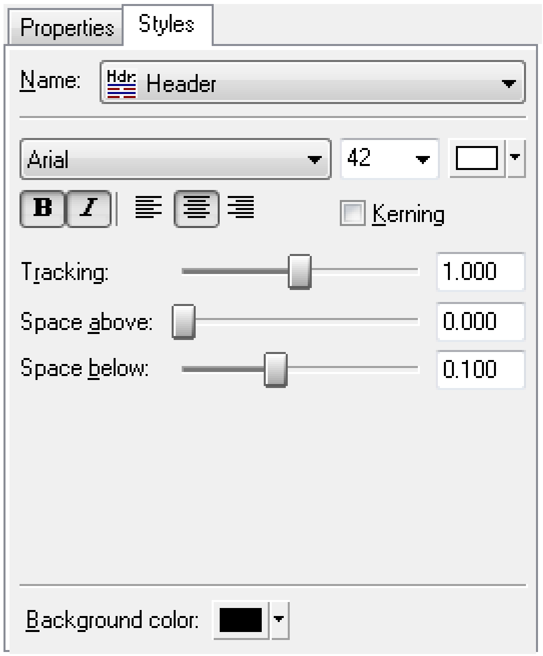
Effect: Scrolling Credits
Left: 0.100
Right: 0.900
Top: 0.100
Scroll direction: Up (Forward)

Effect: Timed Sequence
Left: 0.100
Right: 0.900
Top: 0.100
In: Wipe In Right
Out: Wipe Out Right
Display: Up to Next Header

Item	Description
Effect	Choose SCROLLING CREDITS to create text that scrolls evenly across the screen. Choose TIMED SEQUENCE to create a series of text items that remain on screen for a period of time.
Position	Drag the yellow boxes or enter values in the LEFT, RIGHT, and TOP boxes to adjust the position of your credit text on screen.
Effect Parameters	Choose settings from the drop-down lists to specify how your text appears on screen. If you're using SCROLLING CREDITS, you can make your text scroll from bottom to top or from top to bottom). If you're using Timed Sequence, you can use the IN and OUT drop-down lists to control how each text item appears and disappears. Use the DISPLAY drop-down list to control how many text entries are displayed at once.

The Styles tab

Select an item in the Credits Text pane and use the Styles tab to control the appearance and placement of the selected text.


Properties
Styles
B
I
Kerning
Background color:

Name: Header

Arial

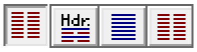
42

☐ Kerning

Tracking: 1.000

Space above: 0.000

Space below: 0.100

Item	Description
Name	Choose a setting from the drop-down list to control the number of columns that are displayed. This setting has the same effect as clicking the STYLE SELECTION button  in the Credits Text pane.
Font Settings	Use these controls to adjust the typeface, size, color, bold/italic properties for the selected text style.
Snapping	Click a button to left-align, center, or right-align the selected text style.
Kerning	Select this checkbox to automatically adjust the spacing between characters.
Tracking	Drag the slider to adjust the amount of space between characters.
Space above	Drag the slider to adjust the amount of space above the selected text style.
Space Below	Drag the slider to adjust the amount of space below the selected text style.
Center width:	Drag the slider to adjust the space between the right and left columns of credit text. **NOTE** This control is displayed only when the STYLE SELECTION button is set to display two columns.
Background Colour	Click to choose the color of the background. If you choose a solid color, the video below your credits will be obscured. If you choose a transparent color, your credits will be displayed over the video.

Noise Texture

You can use the Noise Texture generator to create realistic-looking textures.You can create clouds, lava, metal, wood or even a Rorschach pattern if those hours of editing leave you feeling as if you might need a little analysis.

1. From the NOISE STYLE drop-down list, choose the type of noise you want to create.The names of the settings describe the method the plug-in uses to represent noise in a two-dimensional surface.

   Each setting creates a grid of numbers that run from 0 to 1 where 0 represents the color selected with the COLOR A color picker, and 1 represents the color selected with the COLOR B picker.Intermediate values blend the two colors.If your noise curve goes from 0 to .5 to 0, you'd see a distribution of 100% of color A, a 50/50 blend of colors A and B, and 100% of color A again.
2. Drag the NUMBER OF LAYERS slider to set the number of noise layers that are created.Increasing the number of layers creates a more complex noise pattern.
3. Click the arrow ▶ to show or hide the color controls, where you can choose the two colors that will be used in the noise pattern.

   You can use the color picker, type color values (or names), or use the eyedropper to sample a color from your screen.
4. Drag the FREQUENCY sliders to set the horizontal and vertical frequency of the noise pattern.You can see frequency as the number of ripples along each axis.
5. Click the arrow ▶ to show or hide the offset controls.
   1. Drag the OFFSET X and OFFSET Y sliders to shift the noise pattern horizontally and vertically in the frame.
   2. Drag the PROGRESS slider to shift the noise pattern forward or back (in simulated three-dimensional movement) in the frame.
6. Click the arrow ▶ to show or hide the noise controls.
   1. Drag the MIN slider to set the minimum noise value.Decreasing this setting increases the range of colors available in your noise pattern; increasing the setting skews the color distribution toward color A.

2. Drag the MAX slider to set the maximum noise value.Decreasing this setting limits the range of colors available in your noise pattern between color A and color B; increasing the setting increases the available range of colors.
3. Drag the BIAS slider to add a constant offset to all noise values in the pattern.Negative values skew the color distribution toward color A; positive values skew the distribution toward color B.
4. Drag the AMPLITUDE slider to apply a gain to all noise values.Noise values will be multiplied by this number; negative numbers are forced to 0 (100% color a), and numbers above 1 are limited to 1 (100% color B).
5. Drag the GRAIN slider to control how layers are blended.A setting of 0 produces a smooth blend, and you can increase the setting to create a more mottled appearance.

Solid Color

Solid Color generates solid colored events to be used for backgrounds behind overlays or graphics with transparency or for fades.

Click the arrow ▶ to show or hide the color controls.

You can use the color picker, type color values (or names), or use the eyedropper to sample a color from your screen.

Test Pattern

Use the Test Pattern generator, which is a standard color bar pattern, to calibrate your video output stream.

Other Effects

Deform

Use the Deform effect to stretch, compress, bend, or shear a video event.

FIGURE *Original*

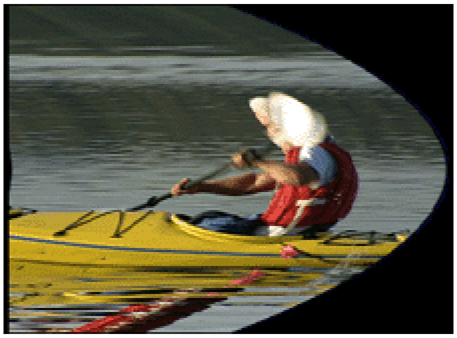


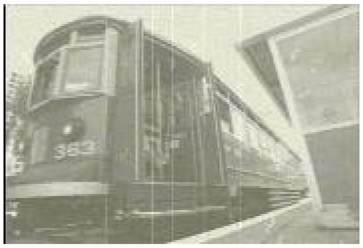
FIGURE *Bend Horizontally*

Item	Description
Amount	Drag the slider to set the amount and direction of deformation: negative values deform down or to the left; positive values deform up or to the right.
Center Image	Select this checkbox if you want to center the video in the frame after deformation.
Background Colour	Click the button and use the color sliders or enter RGB values to choose the color of the background that will be displayed if your video does not fill the entire frame.
Squeze	Drag a slider to compress or expand the video at one of its edges: positive settings compress the frame; negative settings expand the frame.
Shear	Drag the HORIZONTAL and VERTICAL sliders to distort the video along the horizontal and vertical axes: Negative values distort up and to the right; positive values distort down and to the left.
Curve	Drag the sliders to set the amount and direction of deformation: Positive values distort in the specified direction; negative values distort in the opposite direction.

Film Effects

Film effects simulate different types and qualities of film.

Original



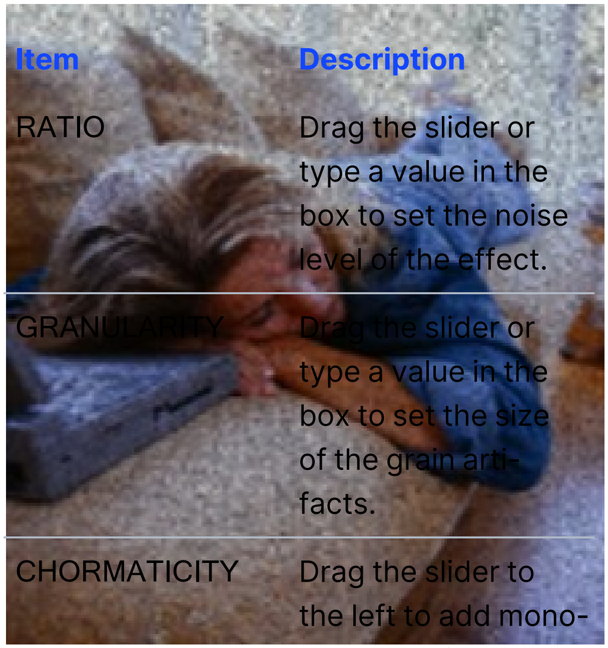
Film Effects

Item	Description
GRAININESS	Simulates the granular appearance of different kinds of film.
TINT	Blends the existing color with the color you have specified.
COLOR	Controls the tone of the video.
CONVERT TO GRAYSCALE	Allows you to switch between grayscale and color.
ENABLE PARTICLES	When checked, the particle selected in the TYPE drop-down is used in the video image.
TYPE	Choose a setting from the drop-down list to simulate the type(s) of particles present in the film.
RATIO	Determines the amount of particles present in the video image. **NOTE** An amount can be set for each type of particle that is enabled. First, select the particle type from the TYPE drop-down box, then adjust the amount.

Film Grain

The Film Grain effect simulates the granular appearance of shooting with traditional film. Use Film Grain when mixing video and film in your project or to match film grain between film stocks.

Original



Extreme

Item	Description
RATIO	Drag the slider or type a value in the box to set the noise level of the effect.
GRANULARITY	Drag the slider or type a value in the box to set the size of the grain artifacts.
CHORMATICITY	Drag the slider to the left to add monochrome noise to the image, or drag to the right to add color noise.

Flicker Control

The Flicker Control effect is a sophisticated tool designed to reduce or add flickering in video clips. This effect can be particularly useful when dealing with footage that has been affected by artificial lighting or when the video has been captured with a high-speed camera under certain lighting conditions.

Setting	Description
Mode	● Reduction A mode of the Flicker Control that aims to reduce existing flicker within the footage without specifying the type of flicker. ● Addition A mode of the Flicker Control used when you wish to add a specific frequency of flicker to the footage, often for creative effect.
Reduction Mode	Available under the "Reduction" mode, this setting lets you choose the method for reducing flicker. ● Temporal blend A reduction method that blends frames over time to reduce flicker. It is an option under the "Reduction Mode" setting. ● Histogram smoothing A reduction method that smooths the histogram of the image over time to reduce flicker. It is an option under the "Reduction Mode" setting.
Analysis Window	Determines the number of frames the effect analyzes for flicker. It can be set from 1 to 3.
Sensitivity	Adjusts the sensitivity of the effect to flicker detection. The range is from 0.01 to 3.00.
Type	Targets the flicker reduction to specific tonal ranges: ● All ● Highlights ● Midtones ● Shadows

Flicker Frequency	Available under the "Addition" mode, it allows setting a specific frequency for the flicker to target, ranging from 0 to 100Hz.
Use motion compensation	If checked, the effect will compensate for motion within the footage, which can help in improving flicker reduction.
Show mask only	When enabled, the effect will only show the mask of the areas that are affected by the flicker control, useful for fine-tuning.
Calculate	This button appears when "Histogram smoothing" is selected, and it will analyze the footage to apply the effect based on the calculated values.
Reset	Resets the settings for the current mode to their default values.

Glint

Effect Tab

Item	Description
Threshold	Determines the luminance level of the source material on which the Glint effect acts. Higher threshold levels result in less material being affected.
Boost	Adjusts the intensity of the highlights. Higher boost results in longer, brighter highlights.
Horizontal radius	Adjusts the length of the highlights extending horizontally. Higher values result in longer highlights.
Vertical radius	Adjusts the length of the highlights extending vertically. Higher values result in longer highlights.
Hue	Controls the base hue of the highlights.
Hue sweep	Controls the direction and extent of the hue cycle along the highlight gradient.
Saturation	Controls the depth of the hue or color selected. Higher values move the color away from gray to the true color.
Orientation	Spins the highlights through a 360-degree cycle. Higher values result in clockwise rotation.
Stripes	Sets the number of streaks emanating from each highlight. Higher values result in more streaks.
Reduce flicker	Toggles prefiltering of the source material to reduce unwanted flickering in the output.
Effect only	Determines whether the source is also displayed in the output of the effect.

Mask tab

Item	Description
Mask mode	Determines if and how the mask is applied. If the mask is Disabled, it will not affect the output of the effect. If the mask is set to Source, it will affect the source material before it is passed through the effect. If the mask is set to Effect, the mask will be applied to the effect only. Show mask only just displays the mask without the source or the effect.
Mask type	Determines the shape and properties of the mask. Each mask type has its own set of property controls. ● Rectangle: Creates a 4-sided mask. ● Bar: Creates a 3-part mask with a fully opaque center region and variably transparent leading and trailing regions. ● Wipe: Creates a 2-part mask with one transparent region and one opaque. ● Ellipse: Creates an elliptical mask.

Rectangle

Item	Description
Softness	Adjusts the crispness of the edges of the rectangle. Higher values create softer edges.
Width	Controls the width of the rectangle. Higher values create a wider rectangle.
Height	Controls the height of the rectangle. Higher values create a taller rectangle.
Corner radius	Rounds the corners of the rectangle. Higher values create corners with larger radii.
X position	Adjusts the position of the rectangle on the x axis. Higher values move the rectangle from left to right.
Y position	Adjusts the position of the rectangle on the y axis. Higher values move the rectangle from up to down.

Bar

Item	Description
Progress	Controls how far across the image the center region of the mask has traveled. Higher values move the center region from the left to right or top to bottom depending on the angle of the mask.
Width	Determines how wide the center region of the mask is. Higher values widen the center region.
Falloff	Controls the crispness of the mask edges. Higher values create softer edges.
Angle	Adjusts the tilt of the bar. Higher values spin the bar through a 360-degree cycle.
Leading region	Controls the transparency of the region to the right or below the bar. Higher values make the region more transparent.
Trailing region	Controls the transparency of the region to the left or above the bar. Higher values make the region more transparent.

Wipe

Item	Description
Progress	Controls how far across the image the transparent region of the mask has traveled. Higher values move the transparent region from the left to right or top to bottom depending on the angle of the mask.
Falloff	Controls the crispness of the mask edges. Higher values create softer edges.
Angle	Adjusts the tilt of the mask. Higher values spin the mask through a 360-degree cycle.
Strength	Controls the transparency of the region to the left or above the bar. Higher values make the region more transparent.

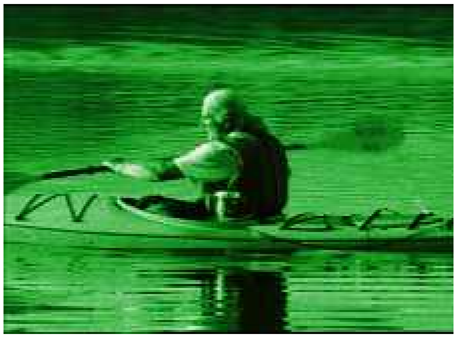
Ellipse

Item	Description
Softness	Controls the crispness of the mask edges. Higher values create softer edges.
Width	Controls the width of the ellipse. Higher values create a wider ellipse.
Height	Controls the height of the ellipse. Higher values create a taller ellipse.
X position	Adjusts the position of the ellipse on the x axis. Higher values move the ellipse from left to right.
Y position	Adjusts the position of the ellipse on the y axis. Higher values move the ellipse from top to bottom.

Gradient Map

The Gradient Map effect maps the colors of your video to the colors of a gradient that you specify. Black is mapped to one endpoint of the gradient, white is mapped to the other end of the gradient, and midtones are mapped according to the intermediate control points you establish in the gradient.

Original

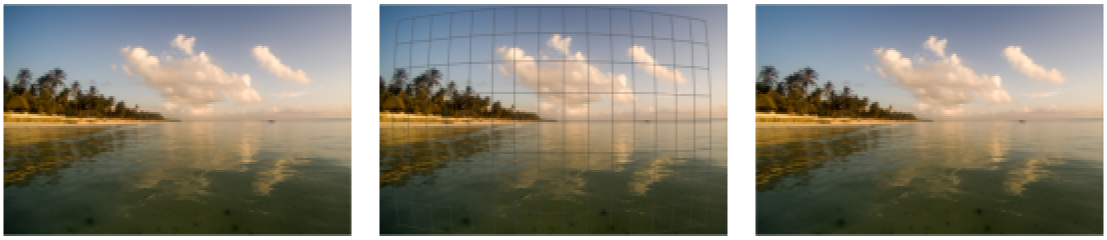


Night Vision

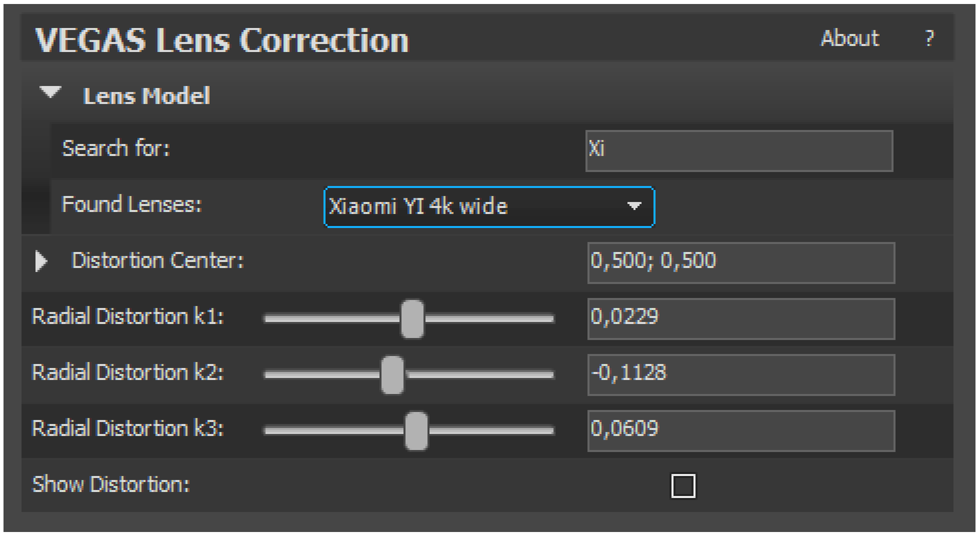
1. Create your gradient:
    1. Click the ADD A NEW GRADIENT CONTROL POINT ⊕ button (or double-click in the gradient) to add control points as needed.
    2. Define the gradient by selecting control points and using the RGB sliders or color picker to set the red, green, blue, and alpha channel for each control point.
    3. c. Drag control points in the gradient display to adjust their distribution as needed.
2. Drag the AMOUNT slider to adjust the mix of the original and remapped video. A setting of 0 displays the original video, and a setting of 1 displays only remapped colors.
3. Select the BLEND or ADD radio button to specify whether the gradient map is blended with or added to the original video.

Lens Correction

Straighten out distorted photos or video footage that come from wide angle cameras like action cams with this plug-in. By setting three factors that characterize the specific distortion of a lens system you can compensate the typical curvature of straight lines at the edge of the picture.



The plug-in comes with a comprehensive list of cameras to set the distortion factors automatically, but in case you don't find your camera on the list it is also possible to set the factors manually.



Search for: Xi

Found Lenses: Xiaomi YI 4k wide

Distortion Center: 0,500; 0,500

Radial Distortion k1: 0,0229

Radial Distortion k2: -0,1128

Radial Distortion k3: 0,0609

Show Distortion: ☐

Automatic

1. Apply the LENS CORRECTION FX as a media or event effect.
2. Expand the LENS MODEL section.
3. Type your camera name or parts of the name into the field SEARCH FOR.
4. Select your camera model from the FOUND LENSES drop-down menu.
5. The three factors RADIAL DISTORTION K1, K2 ,K3 are set according to the database and the picture is straighten out

> **NOTE** By default the plug-in assumes the center of the distortion is also the center of the picture. When the picture was cropped before applying the correction the center can be off-set. If so, move the DISTORTION CENTER to compensate this.

User defined

If you don't find your lens system in the database, you have to set the distortion factors by hand

1. Apply the LENS CORRECTION FX as a media or event effect.
2. Click the SHOW DISTORTION check-box. A grid appears in the preview monitor over the picture that reflects the actual distortion according to the set factors.
3. Align the curved lines that should be straight with the curved lines of the grid by adjusting the k1...k3 factors.

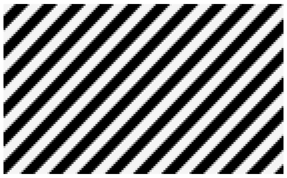
   > **TIP** As a starting point, so that you don't have to start from scratch, you can enter the focal length from the EXIF data into the search field and select one of the offered lenses.

4. Deactivate the SHOW DISTORTION option to see the results and repeat from step 2, if necessary.

Determining lens distorsion with Hugin's Lens calibration GUI

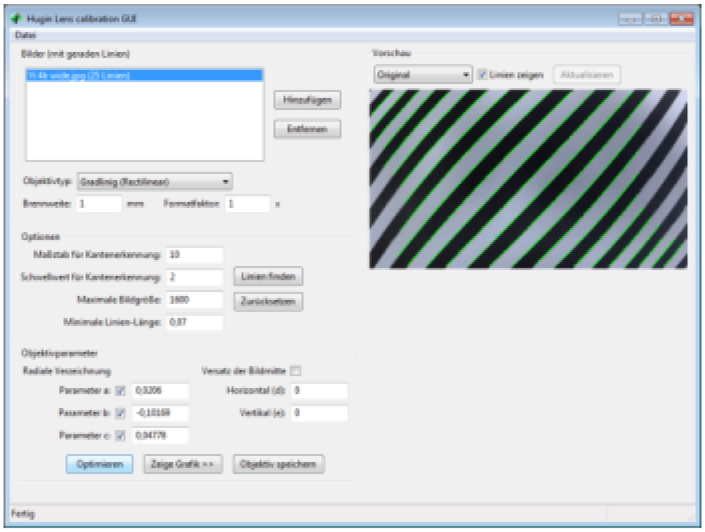
If you have the camera there with which the images were taken, you can also have the distortion factors of the lenses determined with an additional open source program.

1. Print out this picture:



2. Make a video of the print-out with the camera, the print-out in the video clip should be head- on and fill the whole frame.
3. Make a still picture from the video.

4. Download and install the open source software [hugin](). The software is for stitching of panorama pictures but it also contains a lens calibration utility.
5. Open the LENS CALIBRATION GUI software that was installed along with hugin.


Hugin Lens calibration GUI
Datei
Bilder (mit geraden Linien)
Hinzufügen
Entfernen
Vorschau
Original
Linien zeigen
Aktualisieren
Optionen
Linien finden
Zurücksetzen
Objektivparameter
Radiale Verzeichnung
Versatz der Bildmitte
Optimieren
Zeige Grafik >>
Objektiv speichern
Fertig

Objektivtyp: Geradlinig (Rectilinear)
Brennweite: 1 mm
Formatfaktor: 1 x
Maßstab für Kantenerkennung: 10
Schwellwert für Kantenerkennung: 2
Maximale Bildgröße: 1600
Minimale Linien-Länge: 0,07
Parameter a: ☑ 0,0206
Parameter b: ☑ -0,10169
Parameter c: ☑ 0,04778
Horizontal (d): 0
Vertikal (e): 0

1. Insert the picture (ADD...).
2. Enter any value for FOCAL LENGTH and CROP FACTOR.
3. Click the FIND LINES button. If no sufficient number of lines were found, increase the value for EDGE DETECTION SCALE and/or decrease the value for MINIMUM LINE LENGHT.
4. Activate the checkboxes for radial distortion A, B and C
5. Click the OPTIMISE button.
6. Select CORRECTED from the PREVIEW drop-down menu and verify that the lines are straight, if so note the three parameter (a,b,c) for use in the VEGAS Lens Correction plug-in.

Light Rays

Use the Light Rays effect to simulate rays from a light source shining on an image.

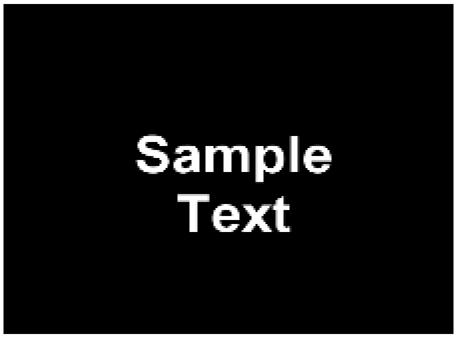

Sample
Text

FIGURE *Original*

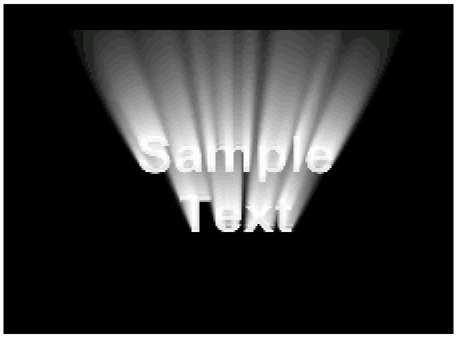
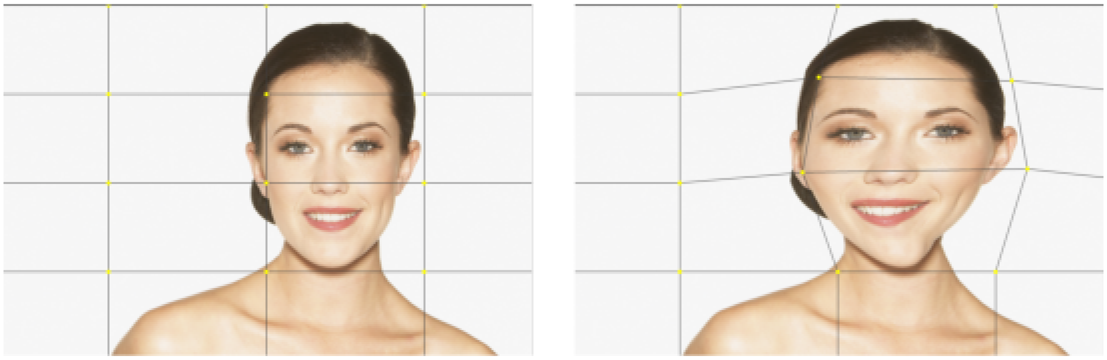

Sample
Text

FIGURE *Intense light rays; light source at bottom center*

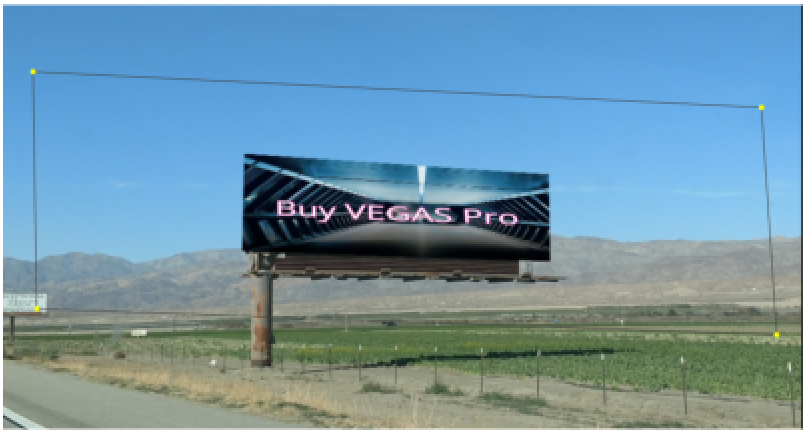
Item	Description
light source	Drag the dot (or enter coordinates in the X and Y boxes) to set the position of the light source. If you're entering coordinates, 0,0 is the top-left corner of your frame; 1,1 is the bottom-right corner.
Hue	Use the color sliders or enter RGB values to choose the color of the light source.
Sensitivity	Drag the slider or enter a value in the box to set the effect's sensitivity to darker shades.
Level	Drag the slider or enter a value in the box to adjust strength of the light source.
Bound Radius	Select this checkbox if you want to focus the light ray effect. Areas outside the radius you specify will be masked out.
Radius X	Drag the slider or enter a value in the box to set the horizontal radius of the effect.
Radius Y	Drag the slider or enter a value in the box to set the vertical radius of the effect.
Feather	Drag the slider or enter a value in the box to determine how smoothly the light rays blend in the background.
Fading	Drag the slider or enter a value in the box to adjust the transparency of the light rays and bounding radius: a setting of 0 is completely transparent; a setting of 1 is opaque.
Noise	Drag the slider or enter a value in the box to add noise throughout the effect.

Mesh Warp

Creatively distort your footage, pictures or generated media with the Mesh Warp FX.



You can quickly distort an image to simulate a perspective view with an 1x1 Mesh Warp .



1. Add the MESH WARP OFX to an event.
2. Adjust the GRID SIZE to the desired number of tiles.
3. In the overlay in the video preview window, adjust the grid points to distort the picture.

   > **NOTE** You cannot change the grid size once you moved any grid point.

4. Double click on a mesh point to reset its position back to the original one. Use RESET MESH to reset all points.

Parameters	Description	Range
Grid size in X	determines the number of horizontal tiles	1-20 (default: 4)
Grid size in Y	determines the number of vertical tiles (editable if following checkbox is unchecked)	1-20 (default: 4)
Lock Grid size in X and Y	links both grid sizes/ makes a symmetrical grid	True/ False (default True)

Mesh Warp Elasticity control

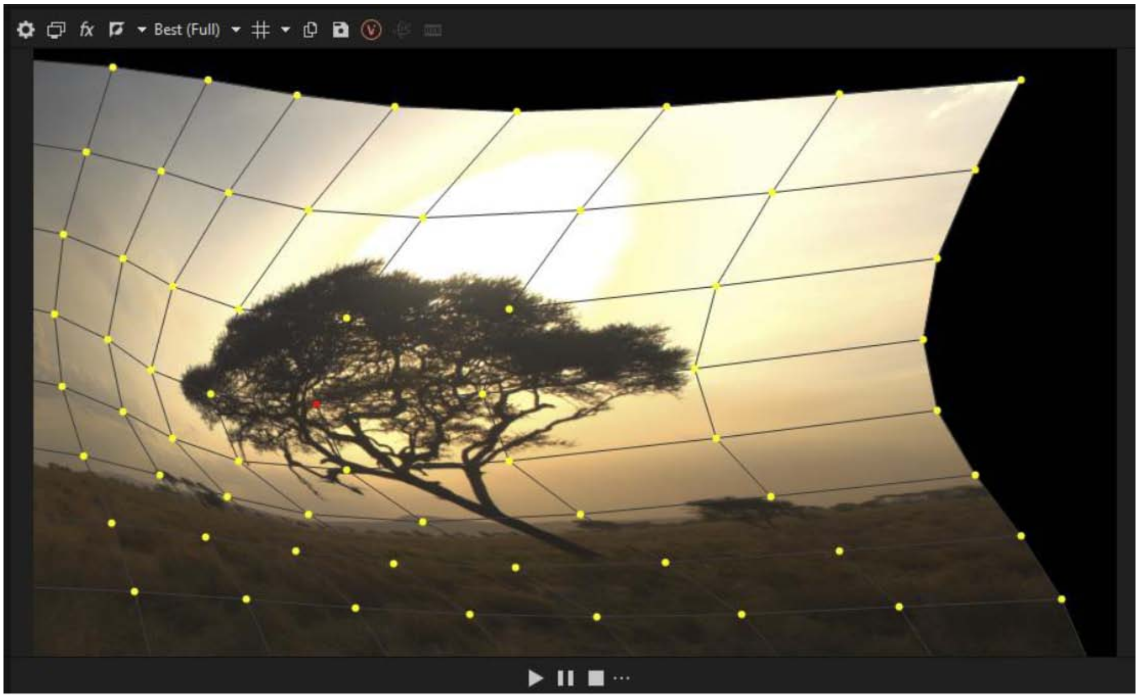
The Elasticity control in the Mesh Warp filter enables you to control how much influence a change in the position of one mesh point has on other mesh points. This can result in more “organic” image warping.

1. After you’ve set your grid size, adjust the Elasticity slider to the value that gives you the effect you want.
   - Set the value to 0.00 if you want the movement of any point to have no effect on other points. This matches the behavior of previous versions of the tool.
   - Set the value to 1.0. The adjustment you make affects all other mesh points. The closer a point is to the one you adjust, the greater the effect on that point.

     Experiment with settings in between 0.00 and 1.00 until you find the value that gives you the results you want.

> **NOTE**
>
> With larger values, you begin to pull mesh points—and thus your image—off of the edges of the live video area. You can avoid this:
>
> 1. Click the Refresh Mesh button to reset the mesh.
> 2. Select the Fixed Border Points checkbox.
> 3. Set the Elasticity slider to the value you want and make an adjustment to a mesh point. Notice that this time all of the border points remain unaffected so that no black shows at the edges of your live video area.

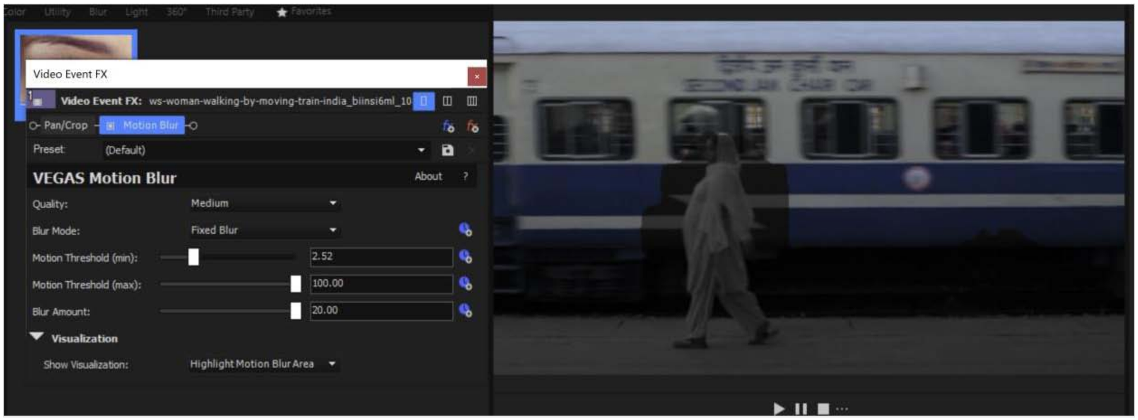
2. In the Video Preview window, adjust one of your mesh points.
3. Click the REFRESH MESH button to reset your mesh.



Motion Blur

Adding motion blur to your video footage can help make the movement in that footage seem more natural. While VEGAS Pro has a Motion Blur envelope on the video bus track, the Motion Blur OFX plug-in gives you more control and enables you to target specific areas of your footage that you want to blur.

The plug-in works best when you apply it at the **timeline clip event level**.



Video Event FX

Video Event FX: ws-woman-walking-by-moving-train-india_biinsi6ml_10

Preset: (Default)

VEGAS Motion Blur

Quality: Medium

Blur Mode: Fixed Blur

Motion Threshold (min): 2.52

Motion Threshold (max): 100.00

Blur Amount: 20.00

Visualization

Show Visualization: Highlight Motion Blur Area

1. Click the VIDEO FX tab to open that window and select MOTION BLUR from the list of plug-ins.
2. Drag the Default thumbnail onto the event that you want to blur.

Quality	Choose the setting you want from the QUALITY drop-down list. Keep in mind that the better the quality, the more processing the tool requires, so you might start with the default setting of Medium and see if the results are adequate.
Blur Mode	Choose the option from the Blur Mode drop-down that gives you the best results: ● Fixed: Blurs all motion pixels with the same amount, determined by the Blur Amount setting ● Adaptive: Blurs each motion pixels according to a multiplier applied to each pixel so that potentially different amounts of blur are applied depending upon the amount of motion for each pixel
Motion Threshold	The Motion Threshold settings enable you to specify a range within which to apply blur: ● Motion Threshold (min): Specifies the amount of movement (expressed as a percentage) below which no blur will be applied ● Motion Threshold (max): Specifies the amount of movement (expressed as a percentage) above which no blur will be applied
Blur Amount slider	Adjust the Blur Amount slider to add blur to the pixels that fall within the range you specified with the Motion Threshold settings. In real application, you'll often use fairly subtle motion blur amounts, but for the sake of discussion, raise this setting to the maximum value of 20.0 so you can easily see the blur effect.

Visualization | Show Visualization

You can use the Visualization tools to help you determine exactly how you want to set your Motion Threshold settings.

Click the Visualization drop-down arrow. Then click the Show Visualization drop-down arrow to reveal three options in addition to the default option of Off:

- Threshold Optical Flow Field:

  Colors represent the amount of motion that occurs on the various areas of the video:

  - Color intensity represents the motion magnitude:
    - Black: no motion or the motion falls outside the range you specify with the Motion Threshold parameters
    - Medium brightness: moderate motion areas
    - Bright: areas with highest motion activity
  - The color represents the motion direction:
    - Red: 0° (vertical motion upwards)
    - Greenish Yellow: 90° (horizontal motion left to right)
    - Cyan: 180° (vertical motion downwards),
    - Violet: 270° (horizontal motion right to left)
- Blur Mask:
  - Black: no motion blur
  - White: at least some level of motion blur
- Highlight Motion Blur Area:

  A dark shading indicates areas that are not blurred

TIP To make the most of these visualizations, use them as reference as you adjust the Motion Threshold settings. This enables you to include or exclude certain areas of your video in the motion blur operation. For example, in the figure above you can see that with the Highlight Motion Blur Area option selected I can use the Motion Threshold (min)control to exclude the walking woman from the motion blur and apply blur only to the train.

NOTE Make sure to set the SHOW VISUALIZATION setting back to OFF before you render your project.

Pinch/Punch

Pinch squeezes the video image in towards its center. Punch expands the image out from its center. Pinch/Punch is very similar to Spherize; however, Pinch/Punch has a slightly sharper distortion.

***FIGURE** Original*

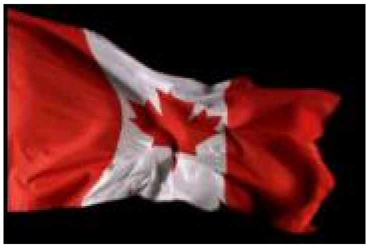


***FIGURE** Pinch*

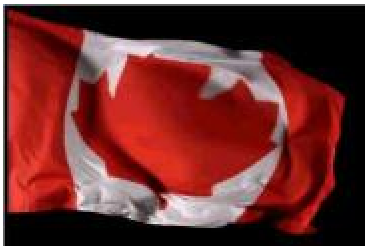
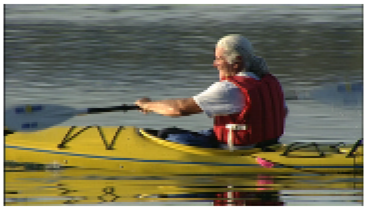


***FIGURE** Punch*

Item	Description
Center	Determines the location of the center of the effect. Drag the square to change the center.
X	Sets the center of the effect on the X axis.
Y	Determines the center of the effect on the Y axis.
Amount	Controls the amount of effect applied to the event.
Horizontal	Determines the width of the effect.
Vertical	Determines the height of the effect.
Proportional	When selected, the vertical and horizontal scaling are proportional based on the value in the HORIZONTAL edit box. When not selected, vertical and horizontal scaling can be set independently.

Radial Pixelate

The Radial Pixelate filter allows you to pixelate your video from an established center point.



Original

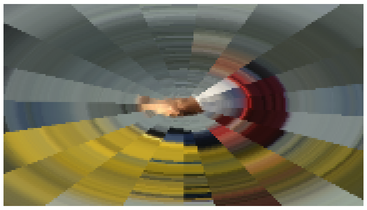


***FIGURE** Moderate Radial preset*

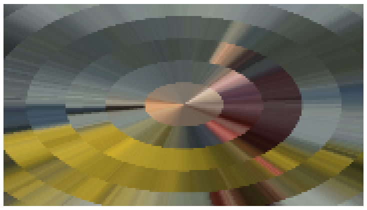


***FIGURE** Moderate Circular preset*

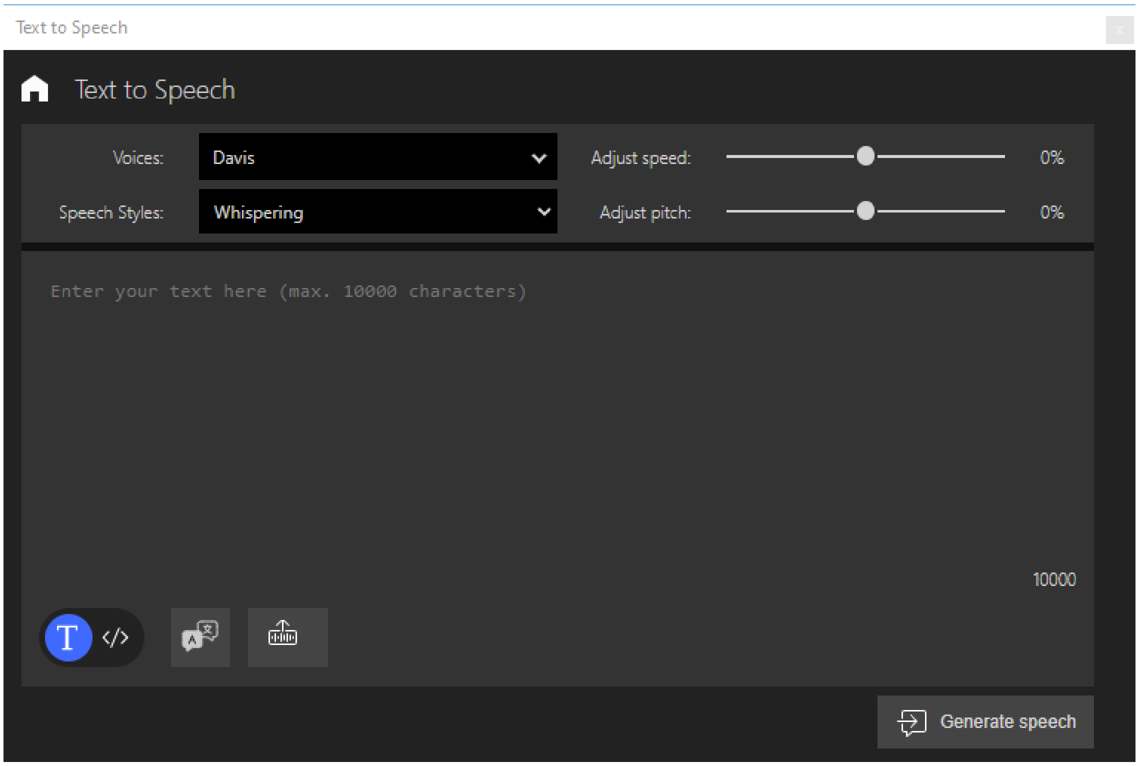
Item	Description
CENTER	Click the arrow ▶ to show or hide the center location controls. Perform one of the following actions to set the center of the effect within your project's video frame: - Drag the point in the position box: ⌖ - Type coordinates in the position box. 0.00, 0.00 represents the lower-left corner of the frame, 0.50, 0.50 represents the center, and 1.00, 1.00 represents the upper-right corner. 0,50; 0,50
TYPE	Choose a setting from the drop-down list to indicate whether you want to pixelate your image in a linear pattern from the center (RADIAL) or in a series of concentric circles (CIRCULAR).
LEVEL	Drag the slider to establish the amount of pixelation that will be applied: drag left to decrease the effect, or drag right to increase the effect.

AI Features

In VEGAS Pro, the suite of AI Features is engineered to simplify complex editing tasks and enhance your projects. These tools range from speech transcription and synthesis to sophisticated video effects like colorization and smart masking. They are intended to assist editors in efficiently managing their workflow and achieving professional-grade results. Whether you're looking to quickly add subtitles or refine the quality of your footage, the AI features provide practical solutions to common post-production challenges.

AI Text to Speech

The Text-to-Speech feature in VEGAS Pro allows you to convert text in videos into speech and add it as an audio file. It provides an efficient way to transform large amounts of text into speech without the need to hire professional voice actors. With this feature, you can utilize AI technology to generate computer-generated voices in various languages and voice options. Additionally, it offers the convenience of translating your narrations into different languages using natural-sounding native voices. Moreover, the cloud-based functionality enables you to seamlessly access new voices and features without requiring a new software build.


Text to Speech
Text to Speech
Voices:
Davis
Speech Styles:
Whispering
Adjust speed:
0%
Adjust pitch:
0%
Enter your text here (max. 10000 characters)
10000
T
</>
Generate speech

NOTE
If your available credit has been used up, you can purchase additional credit.

For more information see Activate credit.

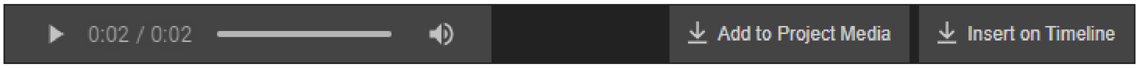
Converting text to speech

1. Choose TOOLS | TEXT TO SPEECH.
2. In the Text to Speech dialog box, enter the text you want to turn into audio into the text field.
3. Adjust style

Change Voice	Click on the drop-down list VOICES and select the desired voice.
Adjust Speed	Use the slider to decrease or increase the speech speed.
Change Speech Style	For selected voices, you can choose from different voice styles.
Adjust Pitch	Use the slider to decrease or increase the pitch.

4. Click on GENERATE SPEECH. The text will be converted and played back.

   Now you can save the generated speech as an audio file and import it into your project.



Saving Audio File to Project

- Click on ADD TO PROJECT MEDIA. The generated audio file will be saved as a .wav file in your project.

  You can access the folder through the PROJECT MEDIAwindow.

Inserting Audio File into the Project

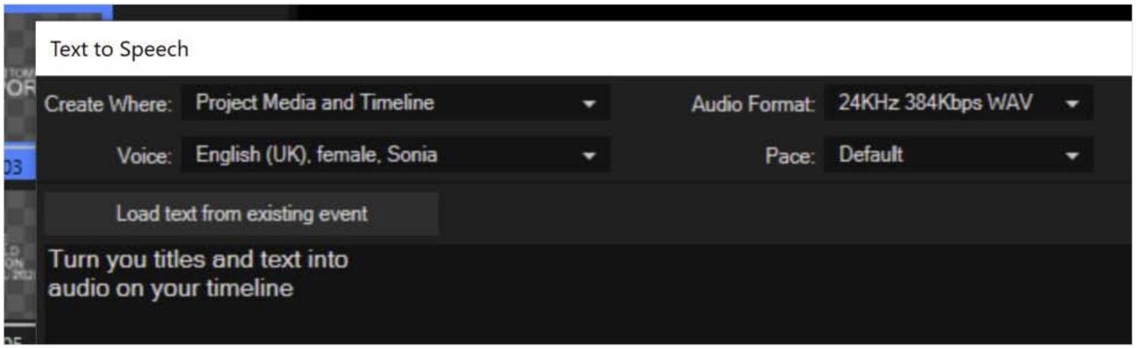
- Click on INSERT ON TIMELINE. The audio file will be inserted as a new audio event on a new audio track labeled SYNTHESIZED AUDIO at the current cursor position in your timeline and automatically saved in the project.

Translating Text

1. Enter text in the text field.
2. Click on the (Translate Text) button.
3. In the displayed dialog box, select the languages:
    - Text Language: Language of the entered text
    - Translate to: Target language
4. Click on the TRANSLATE button. The text in the text field will be replaced with a translation in the specified language.

Load text from Titles & Text events into Text to Speech

You can load the text from any Titles & Text event on your timeline into the Text To Speech tool in order to generate and audio file for that text.



Create Where: Project Media and Timeline
Audio Format: 24KHz 384Kbps WAV
Voice: English (UK), female, Sonia
Pace: Default

Turn you titles and text into audio on your timeline

1. Click the event that holds your Titles &Text generated media to select it.
2. In the Text to Speech dialog box, click the Load text from existing event button. This loads the text from the Titles & Text event into the Text to Speech text input field.
3. Preview the audio and make any changes you need.

Using SSML input mode

SSML (Speech Synthesis Markup Language) is a markup language designed specifically for controlling the output of text-to-speech (TTS) systems. It allows for detailed instructions to format and style the spoken language, such as emphasizing certain words, controlling pause length, or changing speech speed.

SSML provides a set of tags that can be embedded within the text to indicate how it should be pronounced or delivered. These tags provide control over various aspects of speech synthesis, including prosody, pronunciation, volume, and more.

For more information, see https://learn.microsoft.com/en-us/azure/cognitive-services/speech-service/speech-synthesis-markup

EXAMPLE

SSML Example

```
<speak version="1.0" xmlns="http://www.w3.org/2001/10/synthesis" xml:lang="string">
  <voice name="en-US-ChristopherNeural" effect="eq_car" role="YoungAdultMale" >
     Welcome <break strength="medium" /> to text to speech.
  <p>
  <prosody rate="slow">This is a sentence that will be spoken slowly.</prosody>  <pros-
ody rate="fast">This is a sentence that will be spoken quickly.</prosody>
  </p>
  <p>
  <break time="1s"/>A pause of 1 second is inserted here.<break time="1s"/>
  </p>
    </voice>
    <voice name="en-US-JennyMultilingualNeural" style="assistant">
        <lang xml:lang="en-US">
           Enjoy using the feature!
        </lang>
        <lang xml:lang="de-DE">
                    Viel Spaß beim Benutzen des Features!
        </lang>
    </voice>
</speak>
```

AI Speech to Text

new since VEGAS Pro 22

The Speech to Text tool enables you to analyze the audio held in timeline clip events and automatically add subtitles to your project timeline or as text files. You can correct mistakes in the generated text and manipulate the appearance of the subtitles in your project.

The Speech to Text feature also includes text-based editing tools. With these tools, you can use the Speech to Text feature to create a transcript of your project video and then edit the transcript - for example, delete a section of text, cut and paste text, etc.—and VEGAS Pro will automatically edit the events on your timeline to match the edits you made in the transcript. The reverse is also possible. For example, if you cut an event on the timeline, VEGAS Pro will automatically edit the transcript to match. This workflow can greatly speed up your editing process.

USE CASES

- Editing Interview Footage: Transcribe interviews and use the text-based editing tools to quickly remove unwanted sections. This can save time by allowing you to edit the transcript directly rather than scrubbing through the video.
- Creating Subtitles for Educational Videos: Generate subtitles for educational content. This helps in making the content more accessible and allows you to edit and correct the transcript before finalizing the subtitles.
- Creating a Lyric Video: Use the Speech to Text feature to transcribe the lyrics from a song. This can be particularly useful for creating lyric videos where the text needs to sync perfectly with the music. Simply add the song to your timeline, generate the transcript, and edit as needed.
- Documenting Meeting Notes: Transcribe audio from meetings to create accurate notes and minutes. This can be useful for ensuring all important points are documented and can be reviewed later.
- Creating Accessible Content: Generate transcripts and subtitles for video content to make it accessible to viewers with hearing impairments. This improves the inclusivity of your content.
- Vlogging and Podcasts: Transcribe spoken content from vlogs or podcasts to create searchable text, which can improve SEO and help viewers find specific segments of your content more easily.

NOTE

If your available credit has been used up, you can purchase additional credit.

For more information see Activate credit.

Open the Speech to Text tool

---

1. Add an audio or video file that contains someone speaking.

   TIP You can also try the feature with music. Depending upon the type of music and how “out front” the vocals are, you may have good luck turning those vocals into text so you can then make, for example, a lyric video for your song.

2. Click the audio event to select it and choose TOOLS | SPEECH TO TEXT to open the window.

   This window now has three view modes and it opens by default into the Transcript view.

   > **NOTE** The window lists all of the audio events in your project. If you have many audio events in your project, you may have more listed here than you need or want. To see just the event you want, click it in the timeline to select it. Click the SHOW SELECTED EVENTS button. Now only the event (or events if you've selected more than one) appears in the list.

Generate text from the audio file

1. Select the Analysis Target:

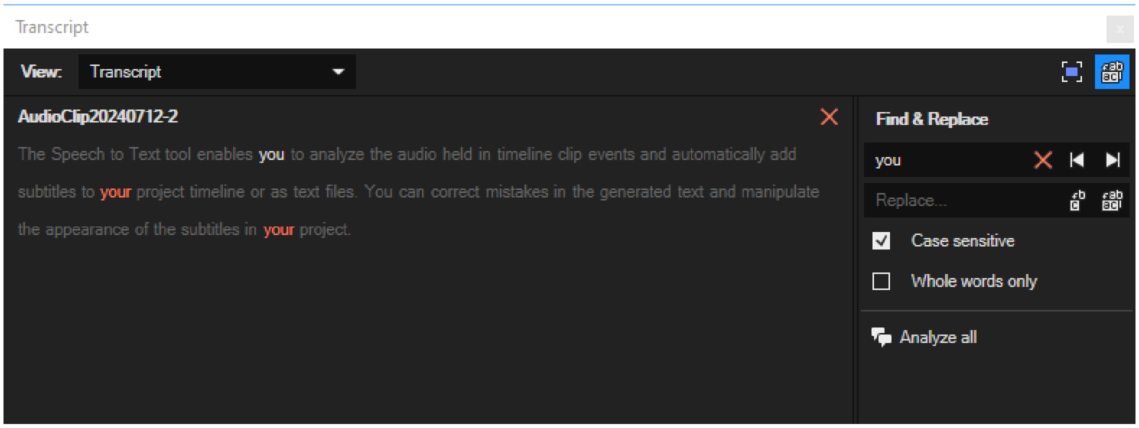
Source Media	Analyzes the entire original media file, regardless of what portion is used on the timeline.
Timeline Event	Analyzes only the selected event on the timeline, focusing on the specific segment used in your project.

2. Click the LANGUAGE drop-down list and choose the correct language.

   The drop-down list contains all of the currently supported languages. The default language setting is AUTO DETECT. For most files spoken in English and several other languages, you can leave this set to Auto detect and the tool does a nice job of accurately identifying the spoken language. If the tool has trouble identifying the language spoken in your file, click the Language drop-down list and choose the correct language.

3. Once you've specified your Language setting, click the ANALYZE button.

   A progress bar indicates the progress and the PREVIEW section shows the text as it's being generated. When the process completes, the generated text appears in a list in the Preview area.



AudioClip20240712-2

The Speech to Text tool enables you to analyze the audio held in timeline clip events and automatically add subtitles to your project timeline or as text files. You can correct mistakes in the generated text and manipulate the appearance of the subtitles in your project.

you

Replace...

☑ Case sensitive

☐ Whole words only

4. When you find errors, you can easily correct them here similarly to how you would correct text in a word-processing document. With all your corrections complete, you're ready to move on.

You can now do either or both of two things with your transcript: perform text-based editing and create subtitles.

Find and Replace

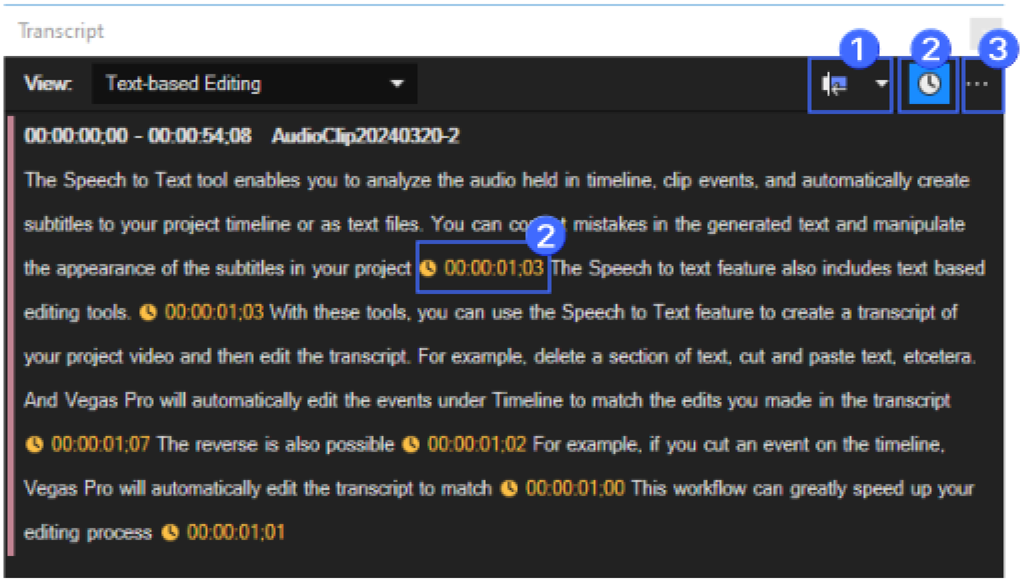
You can search for incorrect spelling and replace it.

Find text box	Enter the word or phrase you want to search for in the transcript.
Replace text box	Enter the word or phrase you want to use as a replacement.
Case sensitive	Check this box to make the search case sensitive.
Whole words only	Check this box to find only whole words that match the search term.
Previous Occurrence	Navigate to the previous instance of the search term.
Next Occurrence	Navigate to the next instance of the search term.
Replace this Occurrence	Replace the currently highlighted instance of the search term.
Replace all Occurrences	Replace all instances of the search term in the transcript.
Clear	Clear the text in the "Find" or "Replace" text boxes.
Analyze all	Process the entire transcript for analysis.

Text-Based Editing

You can edit your timeline simply by editing the transcript in Text-based editing view mode. For instance, say you want to edit out the last sentence of the narration from your project. Instead of making the edit on the timeline where you need to listen and make note of exactly where the sentence begins, you can simply delete the text from the Text-based editing window. Time code values before each line of text identify the exact times in your project timeline that generated subtitle events will span.

» Choose TEXT-BASED EDITING from the VIEW list.



00:00:00;00 - 00:00:54;08 AudioClip20240320-2

The Speech to Text tool enables you to analyze the audio held in timeline, clip events, and automatically create subtitles to your project timeline or as text files. You can correct mistakes in the generated text and manipulate the appearance of the subtitles in your project 00:00:01;03 The Speech to text feature also includes text based editing tools. 00:00:01;03 With these tools, you can use the Speech to Text feature to create a transcript of your project video and then edit the transcript. For example, delete a section of text, cut and paste text, etcetera. And Vegas Pro will automatically edit the events under Timeline to match the edits you made in the transcript 00:00:01;07 The reverse is also possible 00:00:01;02 For example, if you cut an event on the timeline, Vegas Pro will automatically edit the transcript to match 00:00:01;00 This workflow can greatly speed up your editing process 00:00:01;01

1	Auto-Ripple	Select this button and choose a mode from the drop-down list to automatically ripple the contents of the timeline following an edit after adjusting an event's length, cutting, copying, pasting, or deleting events. For more information, see Post-edit ripple
2	Pauses	Click to turn the pause value displays on or off in your transcript.
3	Additional settings	● Show pauses longer than: Adjust the slider to specify a length threshold for the pauses you want indicated in the text view. ● Show file name: Toggling this on would display the name of the audio file currently being transcribed. ● Show time code: When this is checked, the event time codes will be displayed.

Selecting Text in the Transcript

- Click on the first word of the desired sentence to highlight it and observe the playback cursor move to the matching audio in the timeline.
- For a full sentence selection, hold the Shift key and click the last word; this action selects the entire range of text and the associated segment in the timeline.

This method works for text selection anywhere in the transcript, whether at the beginning, middle, or end.

Deleting Text and Corresponding Audio

- With the desired text selected, press the Delete key on your keyboard.

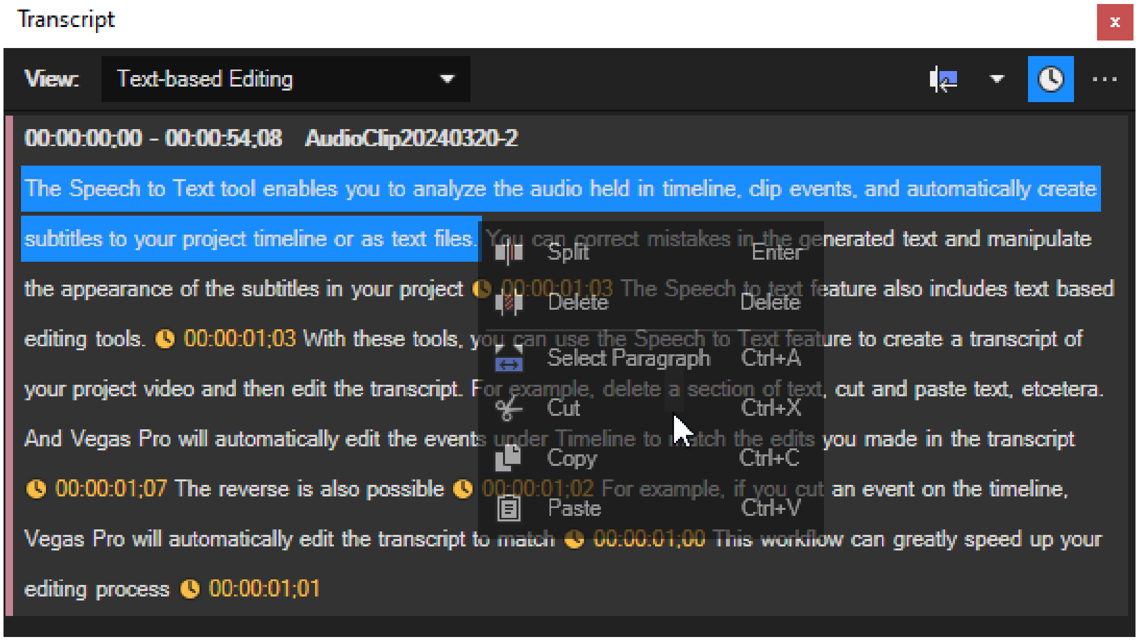
  Observe as the selected text is removed from the transcript and the corresponding audio is deleted from your timeline.

You can quickly go through your text and delete portions you don’t want. If you’ve deleted something and later decide that you want it back, trim the timeline event to bring it back to the timeline. The text automatically updates to reflect the edit you’ve made.

This demonstrates that you can edit the text and also see the changes on the timeline, or edit the timeline and see the changes to the text.

Rearranging Text and Timeline Events

1. In the Text-based editing window, click to select a word or a range of words you want to rearrange.
2. Right-click on the highlighted text and choose "Cut" from the context menu to remove it from the current position.
3. Move to the new location in the transcript where you want to insert the cut text.
4. Right-click and choose "Paste" from the context menu to insert the text at this new position. The timeline will automatically adjust, moving the associated audio to match the rearranged text in the transcript.



View: Text-based Editing

00:00:00;00 - 00:00:54;08 AudioClip20240320-2

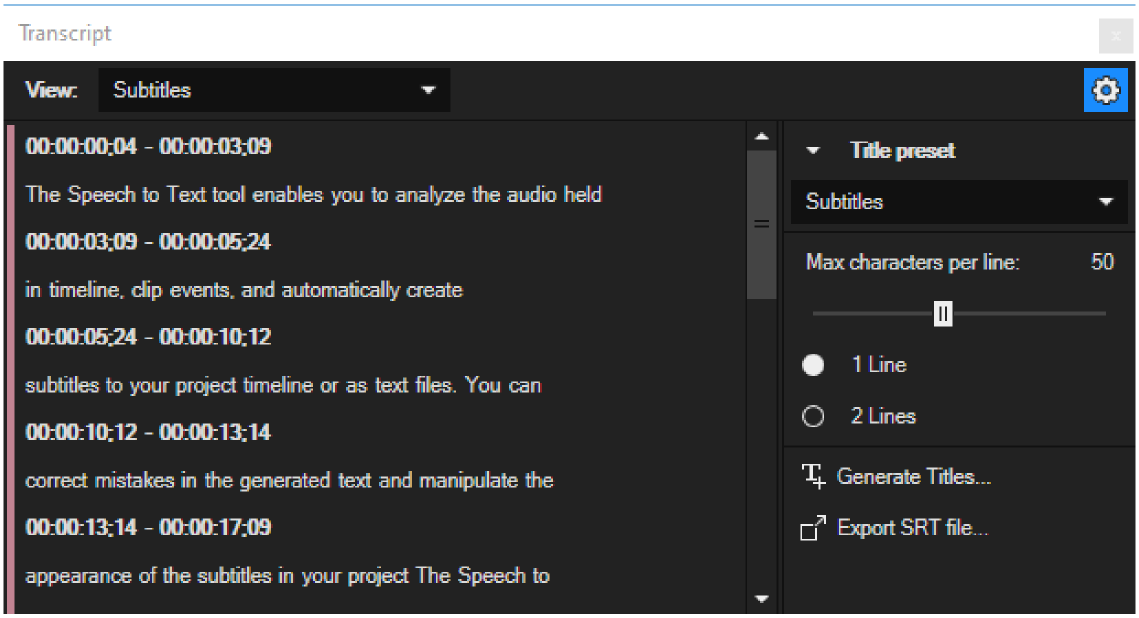
The Speech to Text tool enables you to analyze the audio held in timeline, clip events, and automatically create subtitles to your project timeline or as text files. You can correct mistakes in the generated text and manipulate the appearance of the subtitles in your project 00:00:01;03 The Speech to text feature also includes text based editing tools. 00:00:01;03 With these tools, you can use the Speech to Text feature to create a transcript of your project video and then edit the transcript. For example, delete a section of text, cut and paste text, etcetera. And Vegas Pro will automatically edit the events under Timeline to match the edits you made in the transcript 00:00:01;07 The reverse is also possible 00:00:01;02 For example, if you cut an event on the timeline, Vegas Pro will automatically edit the transcript to match 00:00:01;00 This workflow can greatly speed up your editing process 00:00:01;01

Creating subtitles

Once you're done with all of your edits (using either the timeline or the Text-based editing window), you're ready to generate subtitles.

1. Choose SUBTITLES from the VIEW drop-down list.

   VEGAS Pro has already broken your transcript up into subtitles of reasonable length. These are listed along with the timecode of when the subtitle appears and disappears. Any edits you made in the transcript and Text-based editing view also appear here in subtitles view.
2. Control the look of your subtitles on the right.



00:00:00;04 - 00:00:03;09

The Speech to Text tool enables you to analyze the audio held

00:00:03;09 - 00:00:05;24

in timeline, clip events, and automatically create

00:00:05;24 - 00:00:10;12

subtitles to your project timeline or as text files. You can

00:00:10;12 - 00:00:13;14

correct mistakes in the generated text and manipulate the

00:00:13;14 - 00:00:17;09

appearance of the subtitles in your project The Speech to

Title preset	The Subtitles text preset has been chosen by default, but you can use the drop-down to choose any other preset. If you've previously created a custom preset for your subtitles, it will appear in this list. Choose it from the list to apply it to your subtitles.
Max characters per line	Use the Max characters per line slider to set the length of your subtitle lines.
1 Line / 2 Lines	Select the appropriate radio button depending upon whether you want one-line or two-line subtitles.

3. With all of these settings in place, click the GENERATE TITLES button.

   VEGAS Pro creates Titles & Text events on a new track in your timeline.

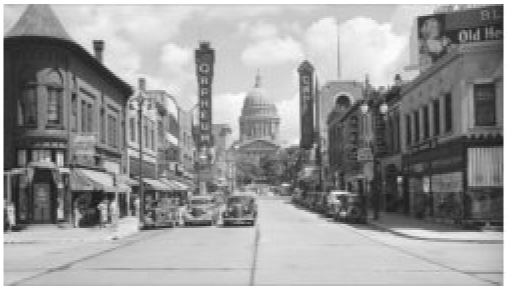
If you've generated a new subtitle track, the tool creates a new text event for each of the subtitles in your list. These events are standard Titles & Text events, and you can edit them however you need to. For instance, if the text doesn't line up perfectly with the spoken audio, you can move the text event to line it up properly. Or you can trim either edge of the event to make it last longer or shorter. You can open the generator and make corrections or adjustments to the text. In short, any edit you would normally make to a text event on your timeline you can make here to perfect your subtitles.

Exporting Subtitles

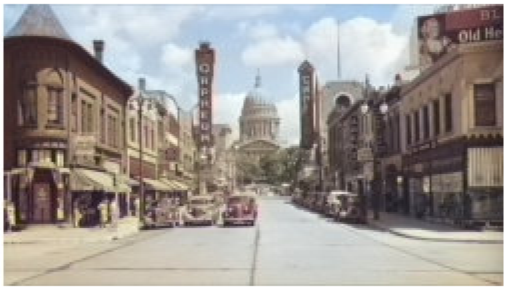
Export your subtitles as an SRT file (SubRip file format), which is a common subtitle file format used for sharing and displaying subtitles across various media players and platforms.

AI Colorization

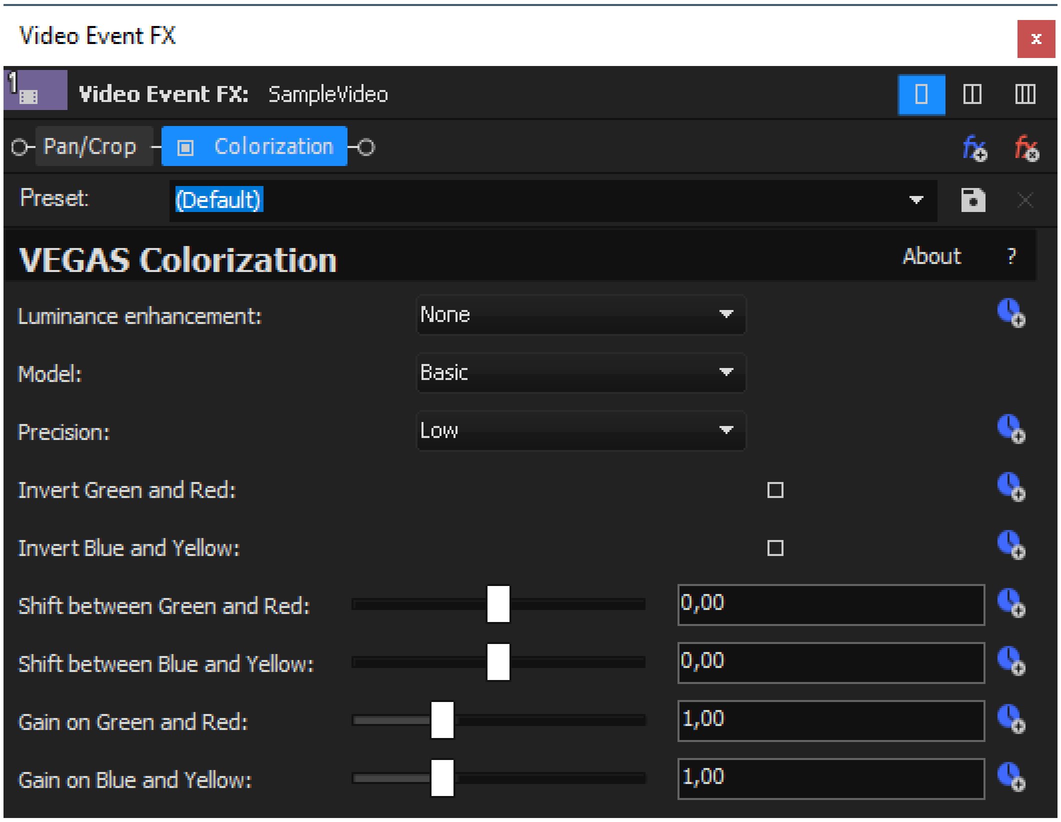
With the Colorization effect it is possible to automatically recolor black and white film material. An AI-supported algorithm determines the most likely colors within the two color dimensions red green and blue yellow.



Black and white



Colorized



Video Event FX: SampleVideo

Preset: (Default)

VEGAS Colorization

Luminance enhancement: None

Model: Basic

Precision: Low

Invert Green and Red: ☐

Invert Blue and Yellow: ☐

Shift between Green and Red: 0,00

Shift between Blue and Yellow: 0,00

Gain on Green and Red: 1,00

Gain on Blue and Yellow: 1,00

Luminance enhancement	If the image is better exposed, the color prediction works better, so you can optimize the brightness. You can also specify whether the enhanced luminance should be applied to the material (APPLY TO OUTPUT) or only used to improve color prediction (ESTIMATION ONLY - DO NOT APPLY TO OUTPUT).
Precision	The precision of the color application can be defined in four different levels: LOW, MEDIUM, HIGH, or MATCH INPUT SIZE. The latter uses the full resolution of the original image for color prediction, the others use a more or less downscaled version of the image.

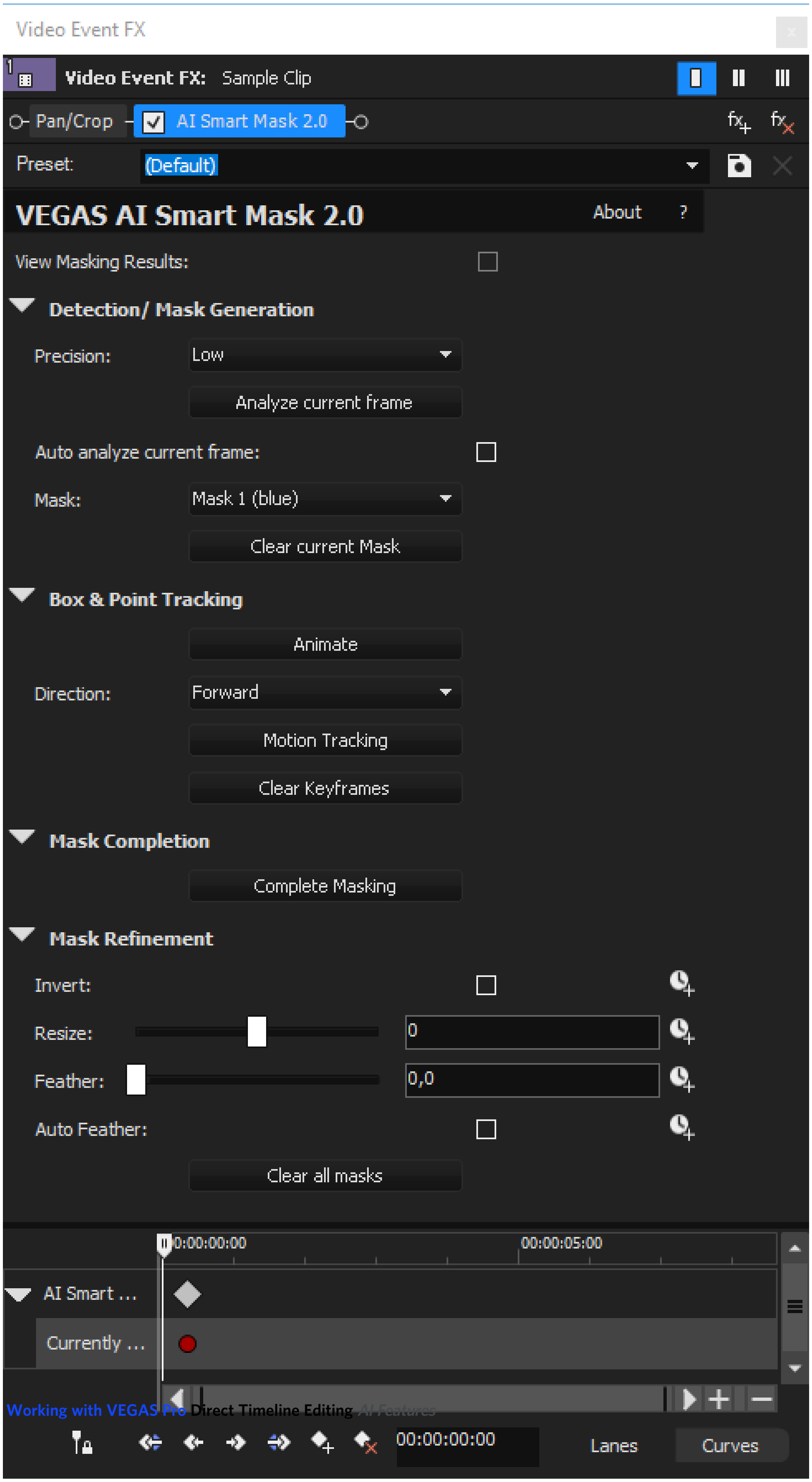
The following parameters are used to adjust the overall coloring of the image. All parameters can be automated in order to react to changing light conditions in the film material.

Invert Green and Red	The assignment of determined color attributes in the red-green channel is swapped.
Invert Blue and Yellow	The assignment of determined color attributes in the blue-yellow channel is swapped.
Shift between Green and Red	The colors in the Red-Green channel are shifted towards red or green.
Shift between Blue and Yellow	The colors in the Blue-Yellow channel are shifted towards blue or yellow.
Gain on Green and Red	Control of the strength of the colorization in the red-green channel.
Gain on Blue and Yellow	Control of the strength of the colorization in the blue-yellow channel.

AI Smart Mask 2.0

new since VEGAS Pro 23

This feature uses AI to identify objects in your video and accurately mask them. You can create up to eight separate masks and apply tracking to them so that the masks follow along with objects in the video even if they're moving. This can help you replace backgrounds without having shot in front of a green screen and has many other potential use cases.



Video Event FX: Sample Clip

Preset: (Default)

VEGAS AI Smart Mask 2.0

View Masking Results: ☐

Precision: Low

Auto analyze current frame: ☐

Mask: Mask 1 (blue)

Direction: Forward

Invert: ☐

Resize: 0

Feather: 0,0

Auto Feather: ☐

Video Event FX
Pan/Crop
AI Smart Mask 2.0
About
?
Detection/ Mask Generation
Analyze current frame
Clear current Mask
Box & Point Tracking
Animate
Motion Tracking
Clear Keyframes
Mask Completion
Complete Masking
Mask Refinement
Clear all masks
00:00:00:00
00:00:05:00
AI Smart ...
Currently ...
00:00:00:00
Lanes
Curves

1 Detection

1. Add a video to your timeline that has one or more distinct objects that you'd like to mask.

   As you're experimenting with this feature, it's a good idea to use a very short section of video since the AI calculations you need to do later can take a good deal of time, even on a fast computer. If you're using a long video, trim the timeline clip event to just 10 seconds or so to limit the time required as you learn this tool.
2. Click the VIDEO FX tab and select AI SMART MASK 2.0 from the list of plug-ins.
3. Drag the Default preset onto the timeline clip event that holds the video you want to mask.
4. Click the beginning of the event to place the cursor at that point.
5. Select a PRECISION from the dropdown list.

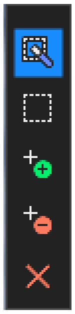
   For the highest quality, leave the Precision setting at HIGH, but for faster processing you can choose LOW.
6. Click the ANALYZE CURRENT FRAME button to identify maskable objects in the analyzed frame.

   Note that if you want the plug-in to analyze whatever frame you click on, select the AUTO ANALYZE CURRENT FRAME checkbox. Be aware though that this can slow you down as you'll have to wait for new analysis every time you switch the active frame.

2 Mask Generation and Adjustment

1. Use the MASK drop-down list in the plug-in window to select which of the eight available masks you want to work with.
2. In the VIDEO PREVIEW window, click an object in your video that you want to mask.

   Colored shading covers the material included in the mask, and a colored bounding box surrounds the masked object.
3. Use the toolbar in the VIDEO PREVIEW window to create and refine masks:



- To **move** the bounding box, drag it from any edge.

  You can drag it to more adequately cover your target object, or to target a different object altogether.

- To **adjust** the mask, drag any corner point of the bounding box.

  As you make the box larger or smaller, you affect exactly what gets masked.

- To **resize** the box vertically or horizontally without affecting the other dimension, hold the Shift key as you drag any edge of the box.

  Keep adjusting the size and position to achieve the best mask.

- **Include** material

  In some cases, parts of the object you want to mask may not be included in the mask even though they are within the bounding box:

  1. Click the ADD OR REPOSITION POINTS button.
  2. Now, click the object you want to add to the mask. This gives the plug-in more information to use in creating the mask.
  3. Drag the point if you need to improve the results further. You can also add additional points to refine things even more.

- **Exclude** material

  If there is an object included in the mask that you don't want to mask:

  1. Click the ADD AND REPOSITION **NEGATIVE** POINTS button.
  2. Then click on the object you want to remove from the mask.

3. You can drag these negative points to new locations for optimal results and add more negative points as needed.

- **Remove** points

1. Click the ✕ REMOVE POINTS button.
2. Click the point you want to remove.

> **TIP** Back at the top of the plug-in window, select the VIEW MASKING RESULTS checkbox. Now you can see the mask's effects on your video. Toggle this checkbox on and off to make adjustments and evaluate your results.

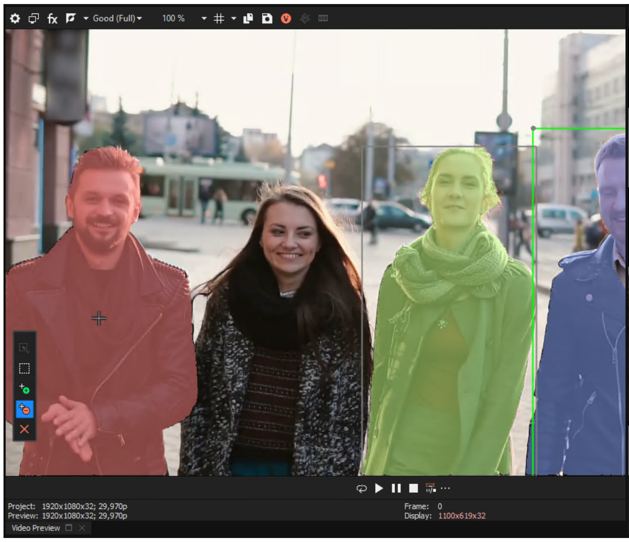

Good (Full)
100 %
Project: 1920x1080x32; 29,970p
Preview: 1920x1080x32; 29,970p
Frame: 0
Display: 1100x619x32
Video Preview

FIGURE *Masks*

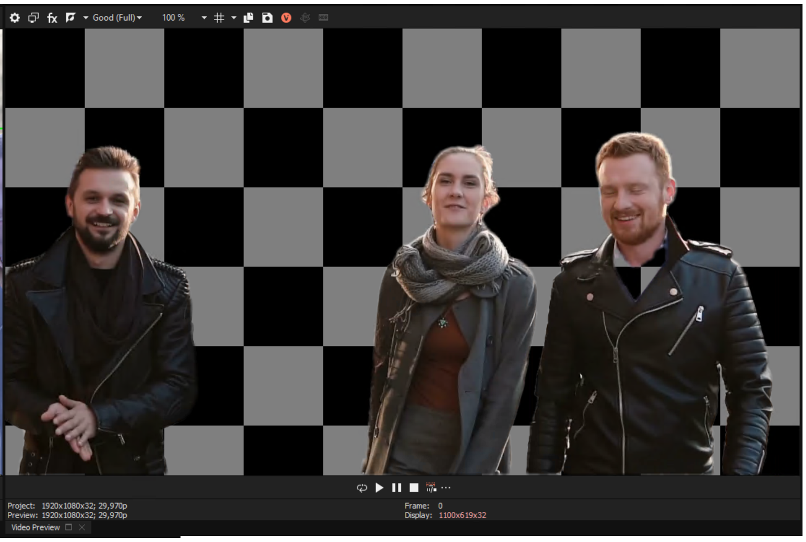

Good (Full)
100 %
Project: 1920x1080x32; 29,970p
Preview: 1920x1080x32; 29,970p
Frame: 0
Display: 1100x619x32
Video Preview

***FIGURE** Activated VIEW MASKING RESULTS checkbox*

In many cases, you won’t need to adjust the bounding box at all to get the results you’re after. You'll notice that an object doesn’t necessarily need to be fully within the bounding box to be included in the mask. Likewise, part of the object may fall outside of the bounding box, yet still be included. In general, it’s best to make the bounding box as large as possible while still limiting the masking to just your target object, especially if the object is moving fast or erratically. The larger you make the box, the better chance you have that the object will stay within the box throughout all of its movements.

Multi-Object Masking

While technically you can add points outside of the bounding box to add a different object to the mask, this will likely not give you the best results. It's usually more effective—and less work—to use separate masks to mask distinct objects.

If you have more than one object in your frame that you want to mask:

1. Click the MASK drop-down list in the plug-in window and choose another mask from the list.
2. Now repeat all the instructions above to create the new mask.

Remove a mask

1. Select the mask from the MASK drop-down list in the plug-in window.
2. Click the CLEAR CURRENT MASK button.

3 **Animate the mask**

Once you've established the mask you want, you'll most likely want to animate the mask to follow any motion of the object in your video. You can use the AI Smart Mask's motion tracking tools to accomplish this automatically or create the tracking manually.

Automated tracking

The first step to animating with the automatic tools requires tracking the object's movement.

1. Set the DIRECTION drop-down list to the direction you want to track.

   Assuming you used the first frame of the event to create your mask as we previously talked about, leave this set to Forward.

2. Click the MOTION TRACKING button.

   This analyzes all of the frames in your video and adjusts the mask accordingly. You won't see this happen, but when it's finished, you'll notice new keyframes in the keyframe controller area.

3. Use the cursor in the keyframe controller area to scrub through the timeline.

   In the VIDEO PREVIEW window you see the mask bounding box move along with the object. Scrub through the timeline and check your bounding box at several sample points—the keyframes that have been created are good frames to check for starters—to make sure the box has accurately tracked the object.

4. Adjust if necessary.

   If you find a frame where the object seems to have drifted outside of the box, use the techniques discussed above to resize and reposition the box to more accurately contain the object. You could check the entire video one frame at a time, but it's often not necessary to do that. Spot checks at several frames throughout the video could very well be enough to ensure the results you want.

5. Click the COMPLETE MASKING button.

   The AI will go through each frame of video in your event, analyze it, and create your mask.

   > **NOTE** Again, be aware that this can take a good deal of time—even on fast computers—since the AI needs to analyze each individual frame and create a mask for it.

6. Review the results.

   When it's done, you'll see a keyframe in virtually every frame of the keyframe controller area. Play your project, and you'll see that your mask now follows the object. To see the results, remember to select the View Masking Results checkbox.

Manual Mask Animation

You don't always have to let the plug-in complete the masking for you. Sometimes, the results will be nearly what you need, but just a bit off here and there.

1. In the keyframe controller area, position the cursor on a frame that needs adjusting, even if it sits between two keyframes.
2. Adjust the mask bounding box so that it covers your object. This inserts a new keyframe at that point.

3. Click the end of the timeline and again adjust the box if you need to. Do this for as many frames as you feel is needed.

   If you'd rather do the process completely manually, click the CLEAR KEYFRAMES button.
4. Click the ANIMATE button. You can now manually add as many keyframes as you need.
5. Click the COMPLETE MASKS button to finish the process.

Mask Refinement

You can use the controls in the MASK REFINEMENT section to further control the masking results.

Invert	If you want to remove the object that you masked instead of everything else, select the INVERT checkbox.
Resize	To spread your mask a bit wider or choke it a bit narrower, adjust the RESIZE slider for the amount you want.
Feather	If the edges of your mask seem harsh, adjust the FEATHER slider to soften them.
Auto Feather	Select the AUTO FEATHER button to have the tool choose the feathering for you.

Each of these Mask Refinement parameters are automatable, so you can fine tune things over the course of your video.

To animate any of these:

1. Click the parameter's Animate button.
2. Move to different frames in the keyframe controller area and adjust the parameter. This creates a new keyframe and interpolates the frames between keyframes as in other OFX plug-ins.

Recreate the masks

Click the Clear Masks button. This removes all of the masks, but preserves the keyframes you've already set.

Keyframe Controller Area

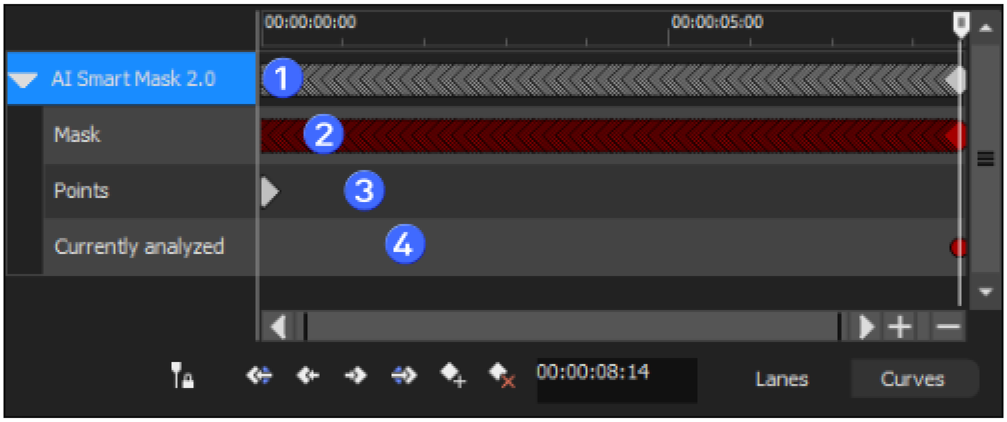


FIGURE *AI Smart Mask 2.0 - Keyframe Controller Area*

1 The top lane holds master keyframes. If one or more keyframes appears in the lanes below, a master keyframe appears here.

2 The MASK lane, indicates which frames have a mask that has already been generated. If you've clicked the COMPLETE MASKS button, each frame of your video now has a mask and thus each frame contains a red keyframe in this lane (as well as a corresponding master keyframe in the lane above).

3 The POINTS lane shows keyframes at every frame for which a bounding box and/or points have been set or modified.

4 The CURRENTLY ANALYZED frame lane, uses a red dot to indicate which frame is currently analyzed. This indicates that this frame will receive updated mask data as you modify bounding box and point data. Only one frame can be analyzed at one time.

Post-Mask Adjustment

When finalizing your mask, you might discover the alignment deviates slightly across certain frames. Here's how to correct any drift and ensure a consistent mask throughout your video.

1. Identify drifting frames.

   Keep an eye on the Video Preview window as you scrub through the keyframe timeline until you see a problem area where the mask drifts off the object.

2. Select problematic keyframes.

   Click above the red keyframes in the Mask keyframe track and drag through the timeline until you've selected all the problem keyframes.

   Use the mouse wheel to zoom in if you need a more detailed view of the keyframe track.

3. Delete unwanted keyframes.

   Press the `Delete` key to delete all the keyframes within the selection area.

4. Adjust and create new keyframes.

   Still in the Mask keyframe track, click one of the frames that needs correcting.

   In the Video Preview window, adjust the bounding box so it includes the entire object again.

   A new keyframe is automatically created in the Points track.

5. Repeat corrections.

   Do this for every frame that no longer has a Mask keyframe.

6. Reapply masks.

   If you've deleted a large range of keyframes, you may not need to create corrections at each frame.

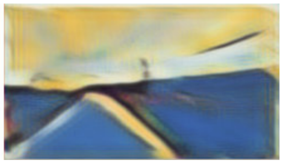
   When you're done, click the Complete Masks button.

   The plug-in creates a new mask for each frame that does not already have one, so this processing won't take as long as processing the entire video as long as you've deleted just a range of the Mask keyframes.

AI Style Transfer

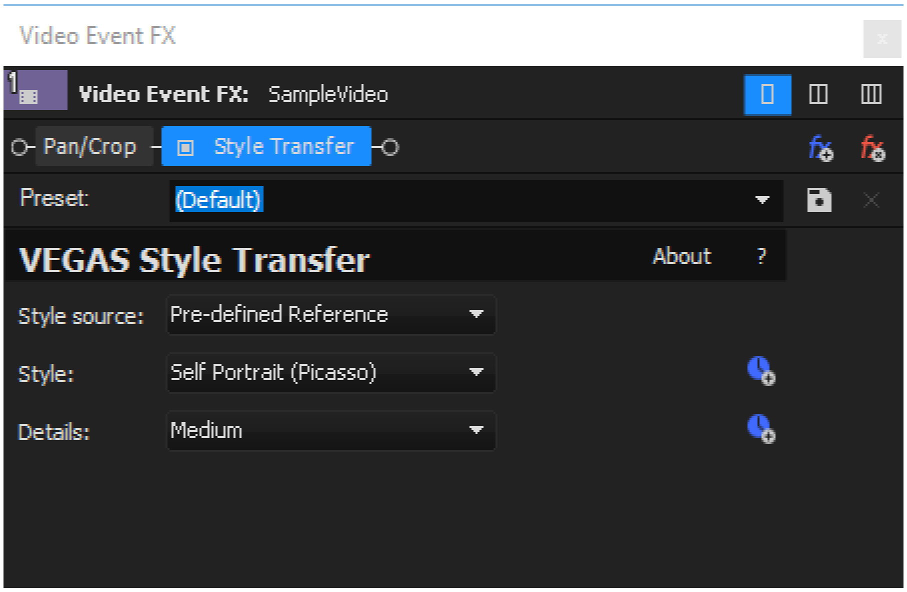
The AI STYLE TRANSFER effect is a video manipulation effect that transfers the style of drawings or paintings to the video using an AI algorithm.

Original



Small Worlds 1 (Kandinsky) style

> **NOTE** As with all AI plugins in VEGAS Pro, you must install the **VEGAS Deep Learning Models package** on your system for this effect to work.



Video Event FX
Video Event FX: SampleVideo
Pan/Crop
Style Transfer
VEGAS Style Transfer
About
?

Preset: (Default)

Style source: Pre-defined Reference

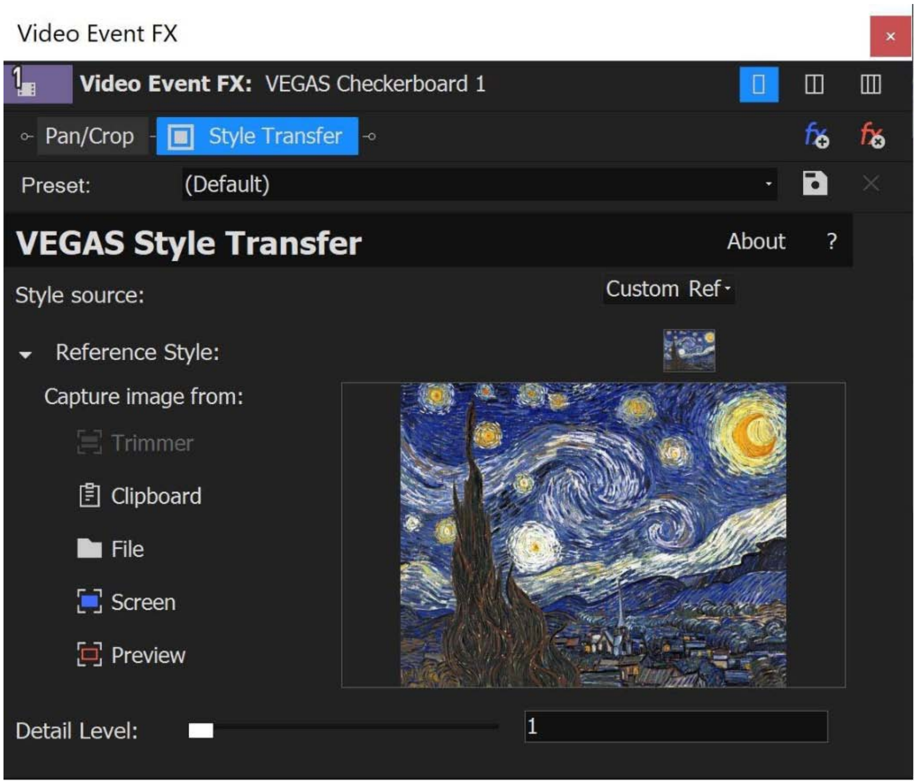
Style: Self Portrait (Picasso)

Details: Medium

1. Add the Style Transfer effect to an event in your timeline.
2. Select a style under STYLE. Under DETAILS, you specify how detailed the style transfer should be. More details generate correspondingly more calculation effort.

Custom Reference for Style Transfer

The CUSTOM REFERENCE STYLE SOURCE option enables you to use any image as the style source that you want to transfer to your video image.


Video Event FX
Video Event FX: VEGAS Checkerboard 1
Pan/Crop
Style Transfer
VEGAS Style Transfer
About
?
Reference Style:
Capture image from:
Trimmer
Clipboard
File
Screen
Preview

Preset: (Default)

Style source: Custom Ref

Detail Level: 1

1. Click the item from the REFERENCE STYLE options list that corresponds to the source you want to capture the reference image from.

Trimmer:	Load a file into your Trimmer window, then select this option to apply the characteristics of that file to your footage
Clipboard:	Copy information to your Windows clipboard, then select this option to apply the characteristics of the clipboard information to your footage
File:	Click this button and navigate to an image file stored on your computer drives to apply the characteristics of that file to your footage
Screen:	Click this button, then drag the selection rectangle around any area of your computer screen (including the entire screen) to apply the characteristics of that area to your footage
Preview:	Place your timeline cursor within an event on your timeline so that it shows in the Video Preview window and then click this button to apply the characteristics of that image to your footage

2. Once you've specified your reference source, adjust the DETAIL LEVEL slider to dial in the exact effect you want. Higher values give more detailed results at the expense of longer processing time.

AI Upscale

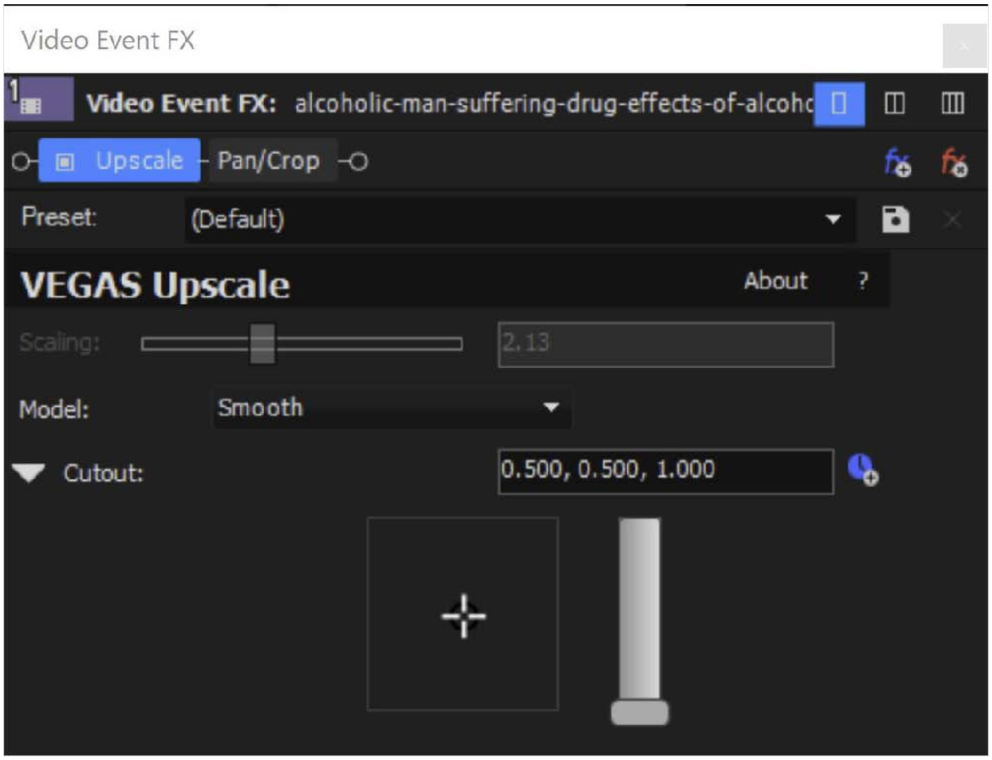
The VEGAS Pro AI Upscale effect enables you to convert low-resolution video to higher resolutions. For example, you can apply it to HD footage so that you can use it in a 4k project. You can also use it to zoom in on video and preserve apparent resolution. Through the power of AI, VEGAS Upscale produces superior quality upscale and zoom effects.

Step 1: Install the VEGAS Deep Learning Models

Like the other AI-powered effects in VEGAS Pro, in order for the Upscale effect to work properly, you must first install the **VEGAS Deep Learning Models**. Follow the link that you received with your VEGAS Pro purchase to download the Deep Learning Models installer.

Step 2: Drag the AI Upscale effect to the left of Pan/Crop in the plugin chain

When you add the VEGAS AI Upscale effect as a **timeline clip event effect**, a warning message informs you that you must drag the Upscale effect to the left of Pan/Crop in the plugin chain. To change the order, drag the UPSCALE button at the top of the VIDEO EVENT FX window to the left and drop it before the PAN/CROP button, as you see in the image below.



Video Event FX

Video Event FX: alcoholic-man-suffering-drug-effects-of-alcohc

Preset: (Default)

VEGAS Upscale

Scaling: 2.13

Model: Smooth

Cutout: 0.500, 0.500, 1.000

Step 3: Adjust upscale level

Once you’ve properly ordered your effects chain as discussed above, a SCALING slider appears.

Use as a video event effect:

When you use the VEGAS Upscale effect as a video event effect, the Upscale plugin automatically upscales the video to your project's resolution as defined in Project Settings, so this slider remains inactive since you don’t need it. But it does tell you the value of the automatic setting, as you can see in the image.

Use as a media effect:

If you use the plug-in as a media effect, the slider becomes active and you can adjust it to whatever upscale level you choose.

1. Drag on the crosshair icon in the CUTOUT section to pan through the image. Use the arrow keys on your keyboard for fine adjustments.
2. Adjust the ZOOM slider to zoom in and out of your image with the crosshair icon as the target for the zoom midpoint.
3. To enter exact values for position and zoom, select the values in the CUTOUT text field and enter the values you want. The first two numbers represent the X and Y coordinates of the crosshair target and the third value represents the current zoom level.
4. To enable animation of these settings, click the ANIMATE button.

AI Z-Depth

Creative Effects with VEGAS AI Z-Depth

new since VEGAS Pro 23

AI Z-Depth, also known as the Z-Buffer, is a fundamental concept in computer graphics and video editing. It represents the depth or distance of objects from the camera's viewpoint in a 3D scene. It allows you to create depth-based composites, add depth of field effects, and achieve realistic visual enhancements in your videos.

USE CASES

Application and Examples

- Depth-based Compositing:

  Z-Depth can be used to position objects in a 3D scene and create realistic composites. For example, texts or graphics can be placed behind certain objects while appearing in front of others within the same video.

  Example: In a cityscape video, text or graphics could be placed in front of background buildings while appearing behind a person or a moving car in the foreground.

- Depth of Field Effects:

  Z-Depth can be utilized to produce depth of field effects in a video, where the foreground is in focus while the background appears blurred.

  Example: In an interview video, the background of the interviewee could be blurred to draw focus to the person and what they are saying.

- 3D Integration:

  Z-Depth enables the integration of 3D objects or effects into a 2D scene to achieve realistic visual results.

  Example: In a commercial video, a 3D logo could be integrated into a real-world scene, aligning it according to the Z-Depth settings.

- Masking and Compositing:

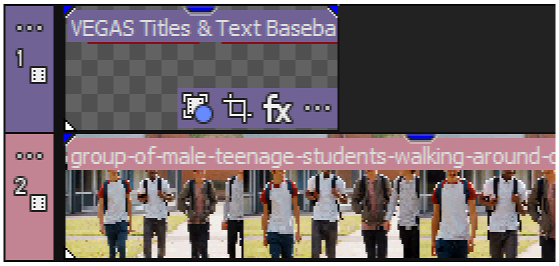
  Z-Depth can be used for masking specific areas of a video or placing objects in front of or behind other elements.

  Example: In a green screen video, Z-Depth could be employed to replace the background with another video or a 3D scene, placing the foreground person in front of this new background.

Using AI Z-Depth as a Compositor

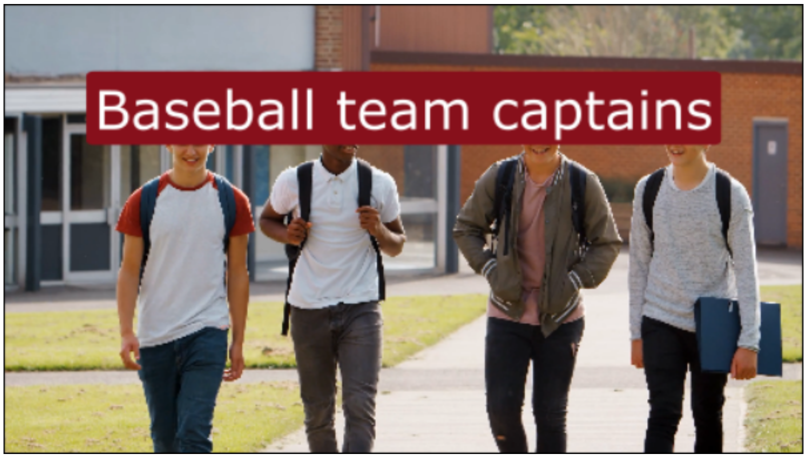
Place some text between two layers of objects in a video.

1. Add a text event to the first track of your project.
2. Place a video clip or still image directly below the text event.


VEGAS Titles & Text Baseba
1
2
group-of-male-teenage-students-walking-around-c

> **TIP** To make this easier to demonstrate, try to find a clip that has an obvious foreground object and background objects. For instance, maybe a person standing in the foreground with buildings in the background.

3. Position the text to overlay the foreground object in the video.


Baseball team captains

4. Click the MORE ··· button for track 1 and CHOOSE COMPOSITING MODE | CUSTOM from the pop-up menu.

5. In the PLUG-IN-CHOOSER window, select Z-DEPTH from the list of compositors.

6. Click the ADD button, then OK.

7. Refine the Mask

   Z-Depth has analyzed your video frame and created a foreground layer and a background layer. Anything on the foreground layer appears to be in front of the text you added, while the background layer elements are behind the text as normal. This creates the illusion that the text sits between the layers. In actuality, the text has been masked out, or cut away around the foreground objects.

»Mode« drop-down list	Z-Depth uses the ABSOLUTE VALUES option as the default. Choose NORMALIZED VALUES from the list you may notice a slight change in the results you see in the VIDEO PREVIEW window. The Normalized Values mode makes it a bit easier to understand what’s going on with Z-Depth.

»Visualization« drop-down list	The Visualization options give you different ways to look at the depth map you are creating.

Furthest:	Z-Depth identifies the object it has analyzed as the furthest away from the camera and assigned this object a value of 0.000
Nearest:	Z-Depth identifies the object it has analyzed as the nearest to the camera and assigned this object a value of 1.000
Depth In:	Specifies the furthest depth to consider when identifying foreground elements
Depth Out:	Specifies the nearest depth to consider when identifying foreground elements
»Invert« checkbox:	The Invert checkbox reverses the effect of the depth map. For instance, if you have text that currently covers background elements but not foreground elements, select the Invert checkbox. Now your text covers foreground elements but not background elements. Deselect the checkbox again.
»Nearest object only« checkbox:	If you want to consider only the nearest objects in the depth mask in your results, select the Nearest Object Only checkbox.

8. Finalize the Composition
    - Choose NONE from the VISUALIZATION drop-down menu to remove the visual overlay.
    - Observe that portions of the text are now masked out, appearing behind the foreground objects.
    - Adjust the parameter controls further if needed, and consider using the Feathering control for smoother results.

Baseball team captains

Add Z-Depth as a video filter to create interesting effects

You can also add Z-Depth as a video filter to create interesting effects.

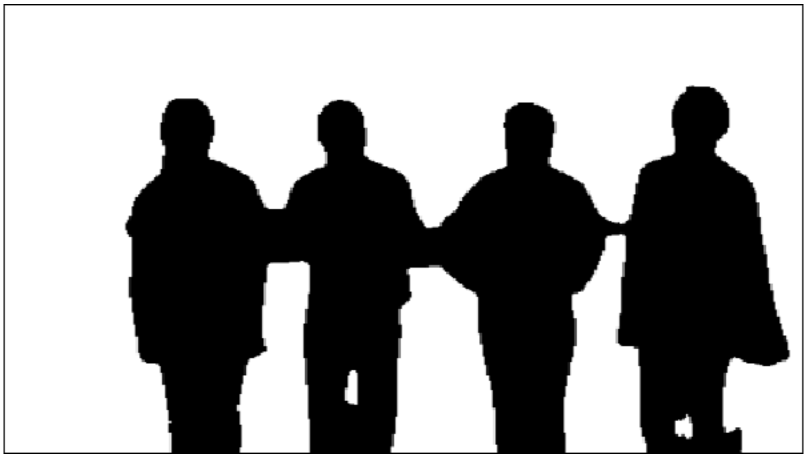
> **EXAMPLE** For instance, you could use a blur filter along with Z-Depth to create a blurry background for a shallow depth-of-field effect. You could use it along with the Color Grading panel or other color adjustment tools to color grade just the background without affecting the foreground. Or use it along with the Style Transfer AI filter to create a surreal effect behind your focus object. You can add virtually any effect you want for correction or special effect purposes.

Let’s experiment with Style Transfer:

1. Add a clip to the timeline.

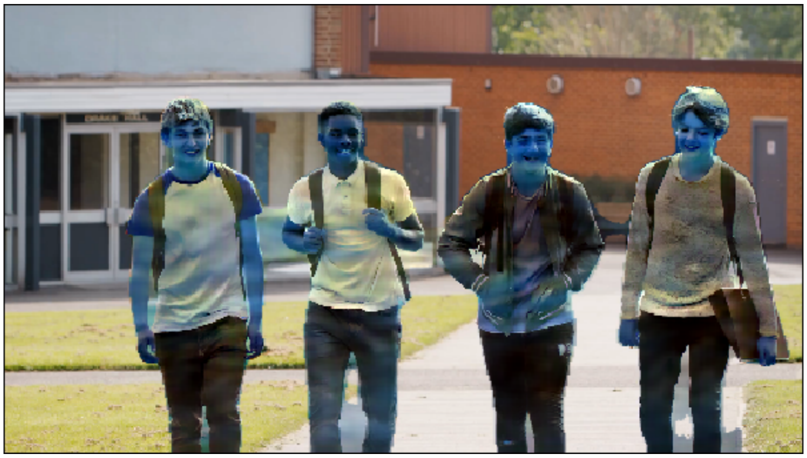
   > **TIP** Choose a clip that has something in the background with a prominent foreground object out front.

2. Open the VIDEO FX tab and select Z-DEPTH from the list of plug-ins.
3. Drag the NORMALIZED VALUES preset onto the timeline clip event.



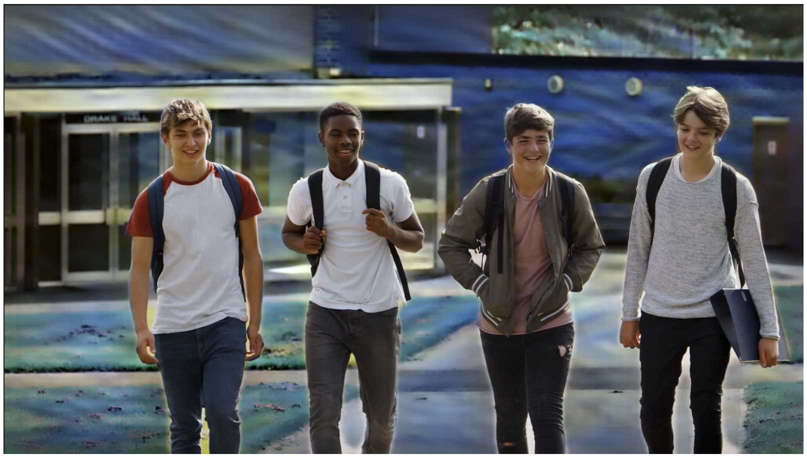
The Video Preview window shows that the plug-in uses black to represent the foreground objects that it has identified, while background objects are white.

4. Adjust the parameter controls to get the white areas as tight around your foreground object or objects as possible.
5. You can also select an option from the VISUALIZATION drop-down for different views into what's going on.
6. Once you're happy with your results, set the Visualization to NONE.
7. Choose a STYLE TRANSFER preset from the VIDEO FX window and drag it onto the clip event.
8. In the VIDEO EVENT FX window, drag the STYLE TRANSFER effect in the effects chain and drop it between the Pan/Crop and Z-Depth effects.
9. Click the Z-DEPTH effect in the effects chain and select the MASK EFFECTS button.



This creates a sort of composite image in which the foreground objects appear with the Style Transfer effect on them while the background images appear normal.

10. To switch it so the background elements have the Style Transfer effect, select the INVERT checkbox.



11. Customize the Mask Effects for the Z-Depth effect to refine the composition.

TIP
Enhance Dimensionality with Z-Depth and Displacement Map

When working with z-depth mattes, consider using techniques like the "Displacement Map" to achieve dimensionality, allowing for walkthrough and layer isolation FX. By leveraging the "Displacement Map" plugin, you can create visually impressive distortions and effects that add depth and realism to your projects.

For more information, see Displacement Map

AI Dehaze

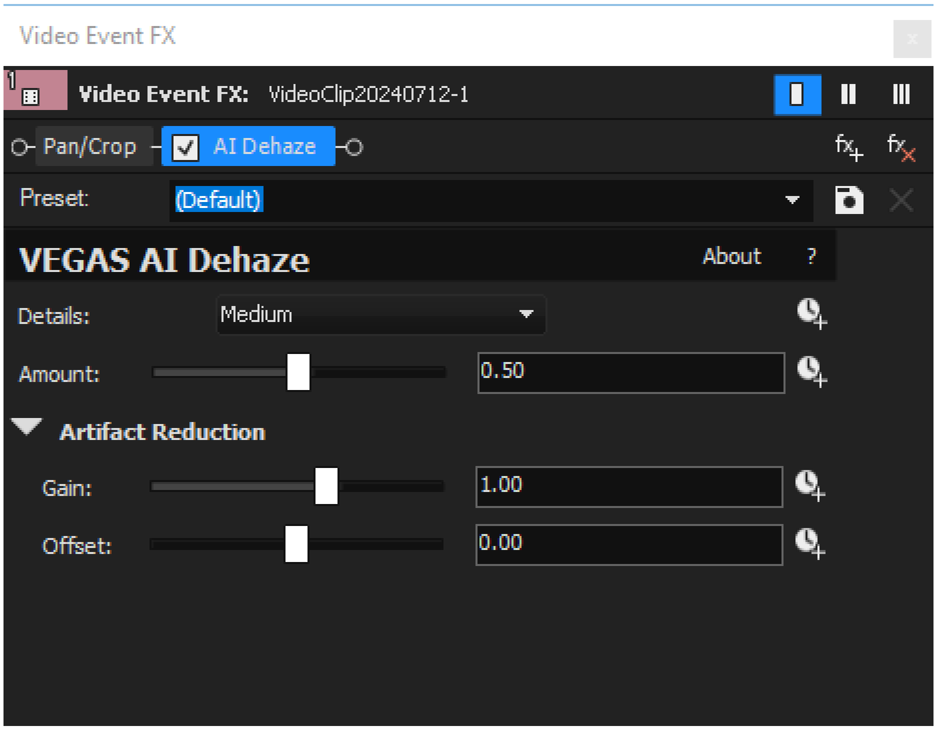
This AI-assisted plug-in analyzes your video for hazy elements like smoke, fog, smog, and other similar effects, removing them to create a clearer and crisper image of your main video element.

USE CASES
- Enhancing outdoor footage affected by fog or smog.
- Improving visibility in videos taken in smoky environments.
- Clarifying underwater videos with haze.

1. Find a clip that has fog, smoke, haze, or some similar problem that obscures the subject of the video and add it to a VEGAS Pro project.

2. Click the VIDEO FX tab and select AI DEHAZE from the list of effects.
3. Drag the DEFAULT preset onto the timeline clip event that holds the hazy video.

   It may take a little while for the tool to analyze your video.



Video Event FX

Video Event FX: VideoClip20240712-1

Pan/Crop ☑ AI Dehaze

Preset: (Default)

VEGAS AI Dehaze

Details: Medium

Amount: 0.50

Artifact Reduction

Gain: 1.00

Offset: 0.00

4. Experiment with the three different settings in the DETAILS drop-down list to see which one gives you the best results.

   Keep in mind that changing these settings can cause a reanalysis and that can take a bit of time.
5. Click the ARTIFACT REDUCTION arrow and increase the GAIN to amplify the video’s intensity and make the image brighter.
6. Raise the OFFSET to try and bring more detail out in your video or lower it to “crush” the blacks a bit and make the detail in the dark areas less prominent.

Settings

FIGURE *Effect with 1.0 Amount*

FIGURE *Effect with max. value of Amount, Gain, and Offset*

Preset	Select predefined settings for the effect.
Details	Choose the level of detail for the dehazing process.
Amount	Control the intensity of the dehazing effect.
Artifact Reduction	Option to reduce artifacts caused by the dehazing.
Gain	Adjusts the strength of the artifact reduction.
Offset	Fine-tunes the artifact reduction process.

AI Sharpen

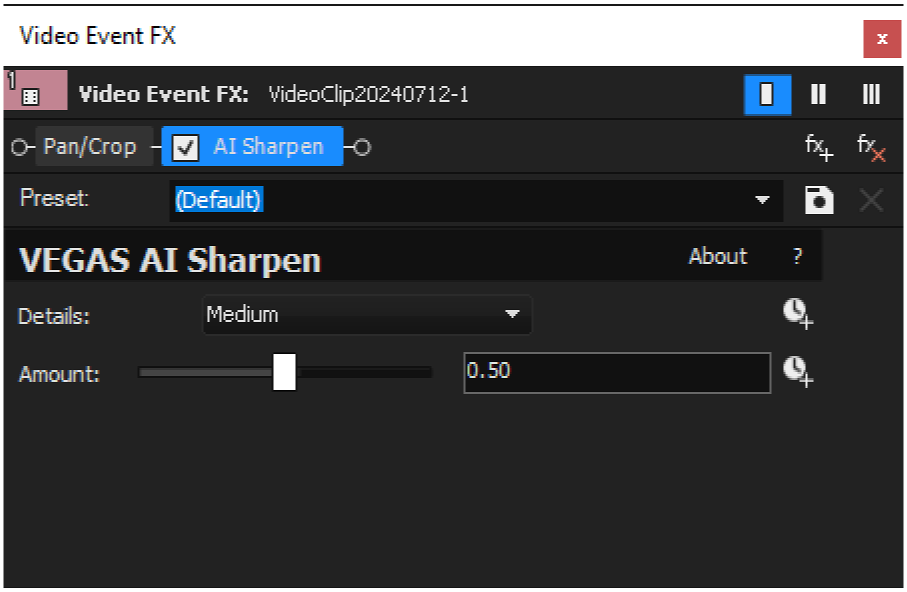
Driven by AI, the AI Sharpen tool analyzes the edges of objects in your video and enhances them to give the image a crisper, clearer look. The enhancement can be used to improve your video's clarity or as a special effect to give your video an unnaturally crisp appearance.

USE CASES

- Enhancing the clarity of slightly out-of-focus footage.
- Improving the definition of edges in low-resolution videos.
- Applying as a special effect for an unnaturally sharp look.

FIGURE *Split-screen view: Original image | maximum sharpness*

1. Add a clip to your timeline. To see the results clearly, it can help to experiment with a video that has many fine lines, like hair or the fur of an animal.
2. Click the VIDEO FX tab and select AI SHARPEN from the list.
3. Drag the DEFAULT plug-in onto the timeline clip event. It will take the AI some time to analyze your video. With analysis complete, you might instantly see the results.
4. Adjust the amount of sharpening applied using the AMOUNT slider or input box.
5. Compare the different settings under the DETAILS drop-down to see which works best for your video. It can take some time for the AI to analyze your video before you see the results.



Preset: (Default)

Details: Medium

Amount: 0.50

Preset	Select predefined settings for the effect.
Details	Choose the level of detail for the sharpening process.
Amount	Control the intensity of the sharpening effect.

AI Smoothen

new since VEGAS Pro 22

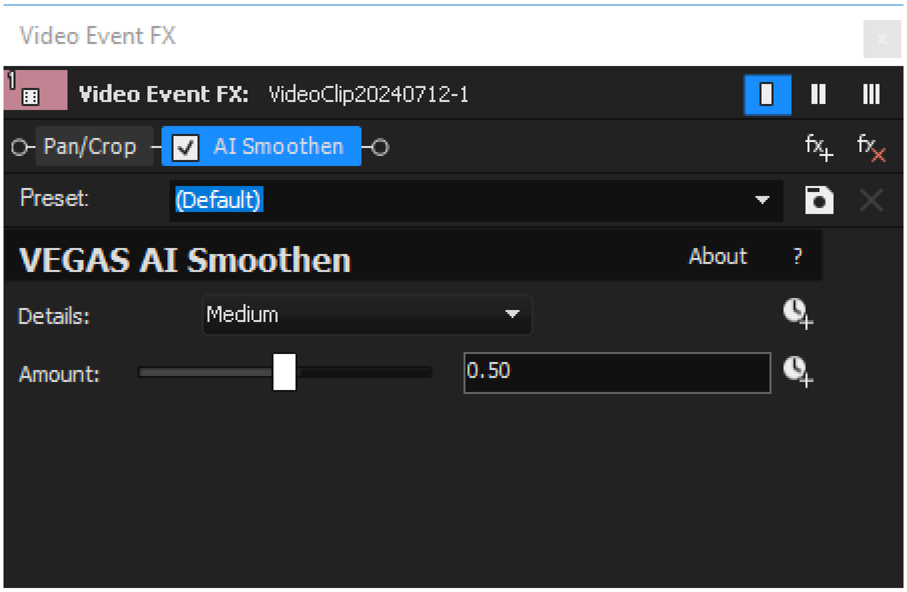
You can use this AI-driven tool to soften small details in your video while preserving sharp edges. This can result in a cleaner, more stylized look where fine details are smoothed out, but edges remain clear. You can use a small amount to give your video a subtly softer appearance or a large amount to create more of a special effect on your video.

USE CASES

- Softening harsh edges in portrait videos for a smoother look.
- Creating a dreamy or ethereal effect in artistic video projects.
- Reducing the clarity of background elements to emphasize the foreground.

FIGURE *Split-screen view: Original image | maximum smoothing*

1. Add a clip to your timeline. To see the results clearly, it can help to experiment with a video that has many fine lines, like hair or the fur of an animal.
2. Click the VIDEO FX tab and select AI SMOOTHEN from the list.
3. Drag the DEFAULT plug-in onto the timeline clip event. It will take the AI some time to analyze your video. With analysis complete, you might instantly see the results.
4. Adjust the amount of smoothing applied using the AMOUNT slider or input box.
5. Compare the different settings under the DETAILS drop-down to see which works best for your video. It can take some time for the AI to analyze your video before you see the results.



Preset: (Default)

VEGAS AI Smoothen

Details: Medium

Amount: 0.50

Item	Description
Preset	Select predefined settings for the effect.
Details	Choose the level of detail for the smoothening process.
Amount	Control the intensity of the smoothening effect.

AI Auto Reframe

This AI-assisted tool automatically reframes your video when the delivery size of your final render does not match the original aspect ratio. For instance, if you have a standard widescreen video and need to deliver it in a square format for Instagram or other channels, this tool shifts focus to the most important object in the video and keeps it centered in the new frame size while other material is cropped out.

USE CASES

- Adapting widescreen videos to square formats for social media.
- Ensuring the main subject remains in focus during aspect ratio changes.
- Automating the reframing process for quick delivery.

There are a couple of different approaches to using this tool.

Automatic Reframing During Render

Use the feature during the render process and let the AI make all the cropping/panning decisions automatically.

1. Open or create a standard 16:9 HD project.
2. Open the **Render** dialog by choosing **File | Render**.
3. Choose your preferred format from the Formats list. This technique will work with any of the listed video formats.
4. From the Templates list, select a delivery format that matches the properties of your file and click the **Customize Template** button.
5. On the VIDEO tab of the CUSTOM SETTINGS dialog box, choose **(Custom Frame Size)** from the FRAME SIZE drop-down list.
6. Set both the WIDTH and HEIGHT settings to the same value, e.g. 1080 for a square final render.
7. Click **OK**.
8. Back in the Render dialog box, set your save location, give your file a name, and select the **AI Auto Reframe** button.
9. Click the **Render** button.
10. View the resulting file and evaluate your results.

ℹ For more information, see Rendering your project

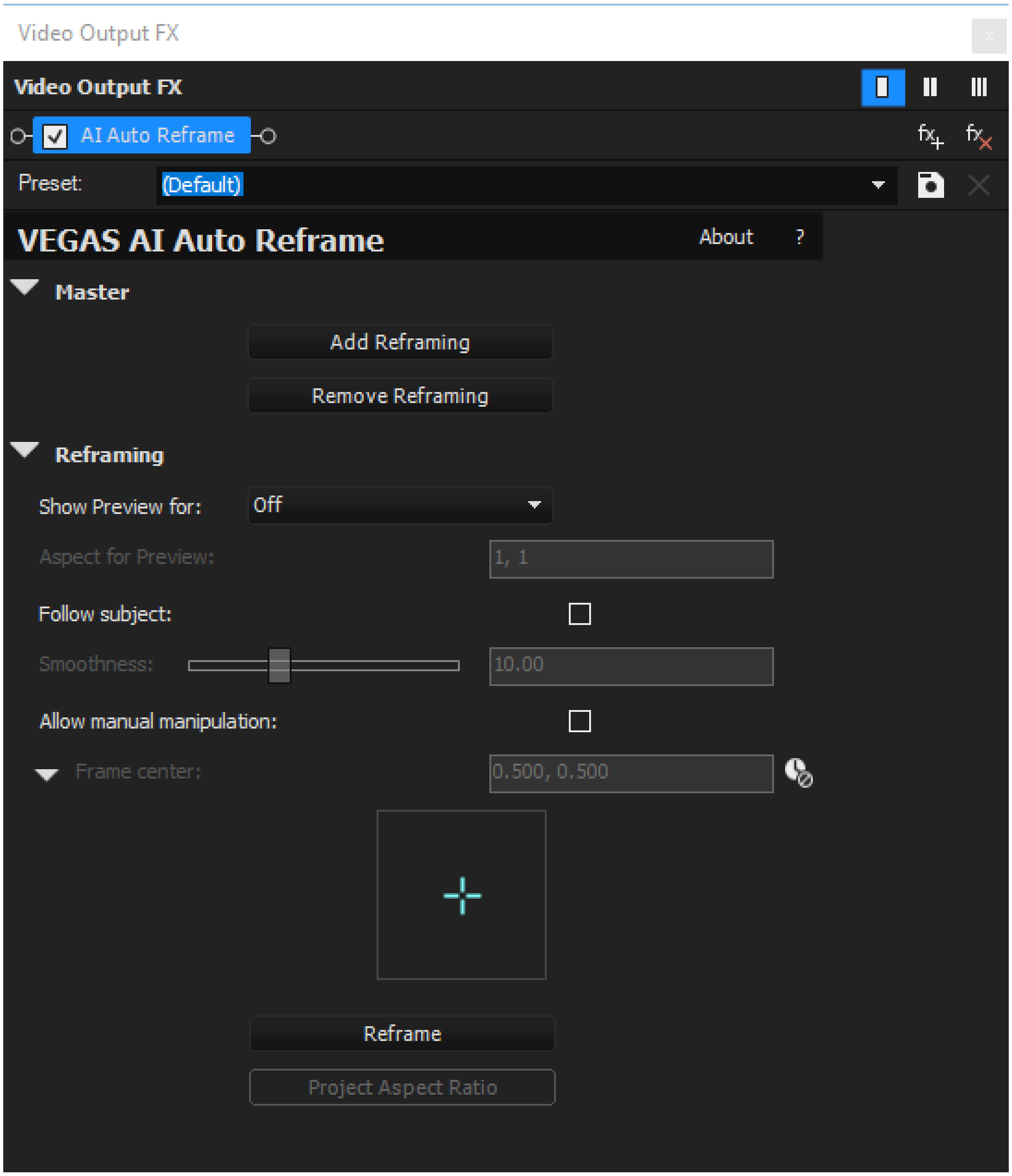
Manual Control Using Video FX

Use the manual control for critical projects to ensure the best results.

1. Click the **Video FX** tab.
2. Click **AI Auto Reframe** from the list of effects and drag the **Default** preset onto the Video Preview window to add this effect to the video output.

This enables you to control the reframing for the entire project.

> **TIP**
> You can also add the effect at any of the other effect levels for even finer individual control.
>
> For instance, you can add it as an event effect to each event that you feel you need it on while leaving it off events where you don’t need it.


Video Output FX
Video Output FX
AI Auto Reframe
VEGAS AI Auto Reframe
About
?
Master
Add Reframing
Remove Reframing
Reframing
Reframe
Project Aspect Ratio

Preset: (Default)

Show Preview for: Off

Aspect for Preview: 1, 1

Follow subject: ☐

Smoothness: 10.00

Allow manual manipulation: ☐

Frame center: 0.500, 0.500

Settings

Dialog Element	Explanation
Preset	Select predefined settings for the AI Auto Reframe effect.
Add Reframing	Button to add the AI Auto Reframe effect to the video.
Remove Reframing	Button to remove the AI Auto Reframe effect from the video.
Show Preview for	Choose whether to preview the effect for a specific aspect ratio.
Aspect for Preview	Displays the aspect ratio used for the preview.
Follow subject	Checkbox to enable the AI to follow the main subject in the video.
Smoothness	Adjust the smoothness of the camera movements while following the subject.
Allow manual manipulation	Checkbox to allow manual adjustments of the frame center.
Frame center	Coordinates to manually set the center of the frame.
Reframe	Button to apply the AI reframing based on the current settings.
Reanalyze	Button to reanalyze the video for the main subject and adjust the frame accordingly.
Project Aspect Ratio	Button to set the aspect ratio to match the project's settings.

Animating video events and tracks

Using animation in VEGAS® Pro, you can pan and crop video, add motion to still images to create a Ken Burns effect, or animate a video track as an overlay.

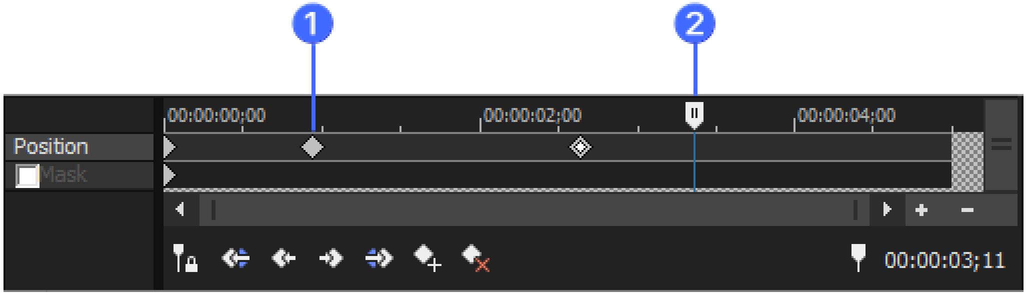
Keyframe animation

Use keyframes to animate and adjust precise movements, effects and other properties for objects.

A keyframe is a single frame in an animation that serves as an essential reference point (start or end point). Various keyframes are set when an animation is created to define movements and changes during the animation process. Intermediate values for the frames are calculated by interpolating the settings. This creates smooth transitions between keyframes. If you want to add further effects or make other changes, you can add more keyframes to create complex animations. Object properties are set for each keyframe.

The Keyframe Controller is displayed at the bottom of Video FX, Video Media Generators, Track Motion, and Transition dialogs and is used to add and remove keyframes and control the FX parameters for individual keyframes.

> **TIP** You have to click at least one ANIMATE button next to the FX parameter control to display the keyframe controller. Some older Video FX have only one ANIMATE button below the FX user interface.



1	Keyframe
2	Cursor position

Each effect in a video effects chain can have its own keyframes.

Adding a keyframe

1. Select the object in the timeline to animate.
2. Open the Video Event FX window.
3. In the Keyframe Controller, click to position the cursor where you want to add a keyframe.
4. Click the INSERT KEYFRAME button . A keyframe is added to the Keyframe Controller timeline.

   The new keyframe's attributes are copied from the previous keyframe to allow you to make subtle changes without recreating all your settings.

   > **TIP** To quickly add a keyframe, double-click on the Keyframe Controller timeline, or position the cursor on the timeline and modify your effect parameters.

Removing a keyframe

1. Select a keyframe by clicking it.
2. Click the DELETE KEYFRAME button .

Navigating between keyframes

To jump to the next or previous keyframe, click the PREVIOUS KEYFRAME and NEXT KEYFRAME buttons (or press Ctrl+Left Arrow or Ctrl+Right Arrow).

To jump to the first or last keyframe, click the FIRST KEYFRAME or LAST KEYFRAME button.

Copying a keyframe

Right-click the keyframe and choose COPY from the shortcut menu. The keyframe and its settings are copied to the clipboard.

> **TIP** Hold the `Ctrl` key while dragging to copy a keyframe.

Using keyframe animation to modify an effect

Keyframe animation can be used to smoothly and gradually modify an effect. For example, if you wanted to gradually fade an event to black and white, you could use the Black and White effect to create two keyframes. The first keyframe would use the RESET TO NONE preset, and the second keyframe would use the 100% BLACK AND WHITE preset. During playback the event would start playing in color and gradually fade to black and white.

1. Add an effect to an event or track. For more information, see [Adding video effects]

   The Video FX window is displayed.

2. Click the ANIMATE button to display the keyframe controller at the bottom of the window.
3. In they keyframe controller, click to position the cursor where you want the effect to start.

   > **TIP** Select the SYNC CURSOR button to synchronize the cursor positions on the main timeline and Keyframe Controller timeline.

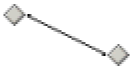
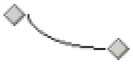
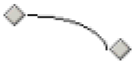
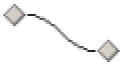
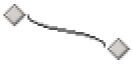
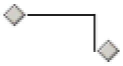
4. Click the INSERT KEYFRAME button.
5. Adjust the effect attributes as desired.
6. Repeat steps 3 through 5 to add a keyframe for each effect parameter change.

   During playback, the effect will smoothly transition through the attributes you established for each keyframe.

Changing the interpolation curve between keyframes

The interpolation curve determines the rate of animation between two keyframe settings.

For event pan/crop and track motion keyframes, the color of the keyframe indicates which interpolation curve is being used.

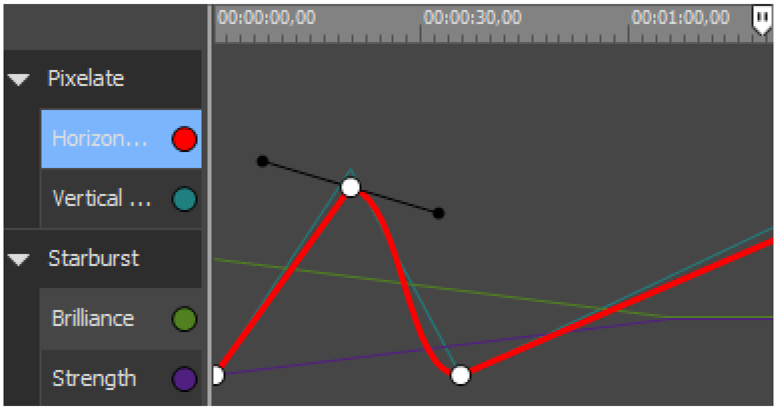
Command	Description	Looks Like
LINEAR ◇	Effect parameters are interpolated in a linear path.	
FAST ◇	Effect parameters are interpolated in a fast logarithmic path.	
SLOW ◇	Effect parameters are interpolated in a slow logarithmic path.	
SMOOTH ◇	Effect parameters are interpolated along a smooth, natural curve.	
SHARP ◇	Effect parameters are interpolated along a sharp curve.	
HOLD ◆	No animation will take place. The keyframe's settings will be maintained until the next keyframe.	

In the Lanes view of the Video FX dialog or in the Pan/Crop or Track Motion dialog, you can right-click a selected keyframe and choose a command from the shortcut menu to change the interpolation curve. The curve type is updated for all selected keyframes.

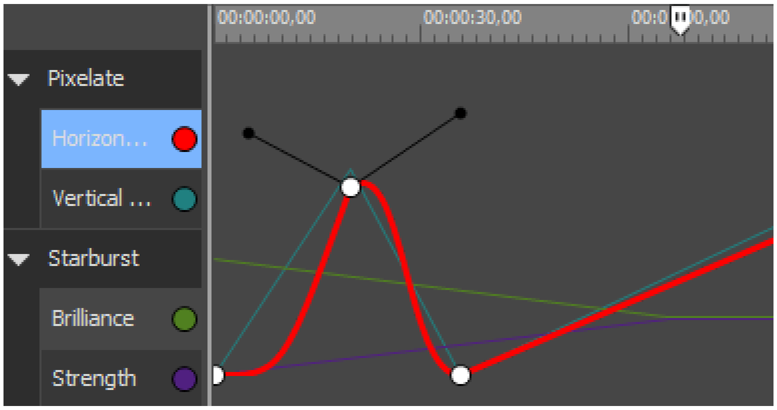
For video effects, the line between keyframes indicates which interpolation curve is being used.

In the Curves view of the Video FX dialog, you can manually adjust a keyframe's spline curves. Click the LANES/CURVES button to toggle between Lanes and Curves views.

Right-click a keyframe and choose MANUAL from the shortcut menu to display the spline curve handles. Drag the handles to adjust the curve.


00:00:00,00
00:00:30,00
00:01:00,00
Pixelate
Horizon...
Vertical ...
Starburst
Brilliance
Strength

Right-click a keyframe and choose SPLIT MANUAL from the shortcut menu to independently adjust the curve on each side of the keyframe.


00:00:00,00
00:00:30,00
00:0 0,00
Pixelate
Horizon...
Vertical ...
Starburst
Brilliance
Strength

Moving keyframes

After you've set your keyframes, you may need to adjust their positions along the timeline. Drag a keyframe to a new position in the Keyframe Controller timeline to change its position.

Hold Ctrl or Shift while clicking to select multiple keyframes. A selected keyframe is displayed as ◈, and an unselected keyframe is displayed as a ◇.

TIP Hold Alt while dragging the first or last keyframe in a group of selected keyframes to adjust their spacing equally.

Adjusting track-level keyframes

If you're using video track effects or track motion, keyframes will be displayed in the timeline below your video track. You can drag keyframes to adjust their position, add and delete keyframes, and change the interpolation curve between keyframes.

TIP Select the LOCK ENVELOPES TO EVENTS button to lock track-level keyframes to the events on the track. When keyframes are locked, you can move events along the timeline, and their associated keyframes move with them.

Click the EXPAND/COLLAPSE TRACK KEYFRAMES button in the track header to toggle the height of the track keyframes. When expanded, a separate row is displayed for each keyframed item.

NOTE Event-level keyframes are not visible in the timeline.

Adding track keyframes

1. Click the EXPAND/COLLAPSE TRACK KEYFRAMES button .
2. Double-click to add a keyframe to the track view. The keyframe will use the same settings and interpolation curve as the previous keyframe.

Moving track keyframes

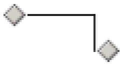
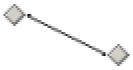
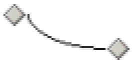
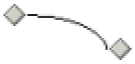
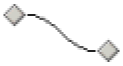
Drag the keyframe to a new position in the timeline. If track keyframe rows are collapsed, overlapping keyframes will move together.

> **TIP** To move multiple keyframes, select the Envelope tool and create a time selection that includes the keyframes you want to move. When you drag, all keyframes in the time selection will move together.

Changing the interpolation curve between keyframes

The interpolation curve determines the rate of temporal interpolation: the rate of motion between two keyframes. To change the interpolation curve, right-click a keyframe and choose a command from the shortcut menu:

> **NOTE** If you want to adjust spatial interpolation—how motion occurs within a video image—change the SMOOTHNESS setting in the Event Pan/Crop or Track Motion dialog. A SMOOTHNESS setting of 0 produces linear motion from one keyframe to the next. Increasing the setting produces a curved path. For more information, see Panning and Cropping Video Events and Editing track motion

Command	Description	Looks Like
HOLD ◆	No animation will take place. The keyframe's settings will be maintained until the next keyframe.	
LINEAR ◇	Effect parameters are interpolated in a linear path.	
FAST ◇	Effect parameters are interpolated in a fast logarithmic path.	
SLOW ◆	Effect parameters are interpolated in a slow logarithmic path.	
SMOOTH ◇	Effect parameters are interpolated along a smooth, natural curve.	

Editing track keyframes

Individual keyframe parameters cannot be adjusted in the track view. To edit a keyframe, open the effect's property page.

1. Click the EXPAND/COLLAPSE TRACK KEYFRAMES button to expand track keyframe rows.
2. Double-click a keyframe to open its property page. For more information about using an effect, see Adding video effects

Animate OFX keyframes on the timeline

Timeline-based OFX keyframe animation lets you create and adjust envelopes for event and track effects (OFX) directly in the timeline. This allows you to animate video effect parameters with the same intuitive precision you already know from automating volume or pan. By working directly within the timeline, you maintain full visual context and avoid unnecessary UI switching.

USE CASES

- Work in full visual context: see the result while you place and adjust keyframes on the timeline.
- Synchronize parameter changes precisely to frames, cuts, and beats.
- Coordinate multiple parameters of one effect so they change together over time.

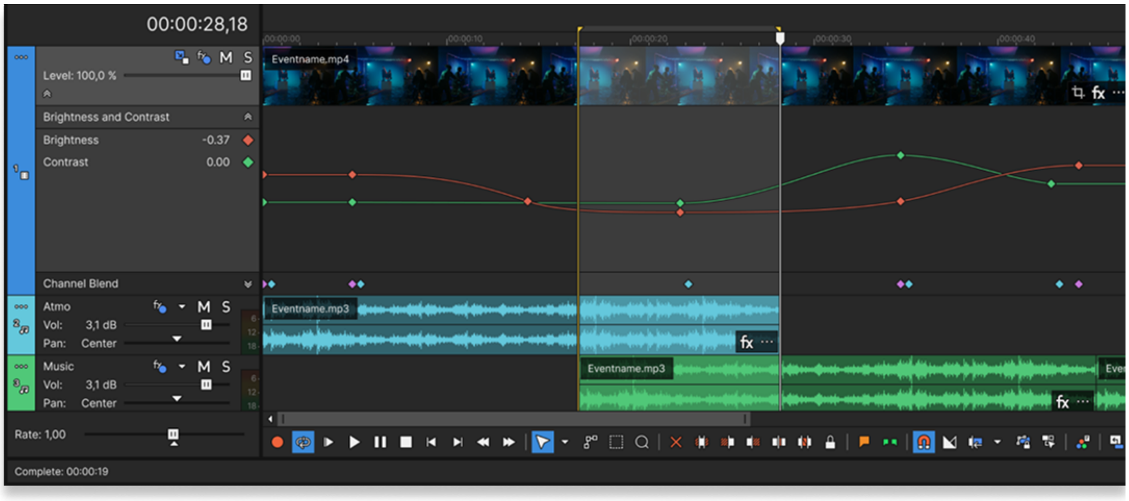

00:00:28,18
Level: 100,0 %
Brightness and Contrast
Brightness
-0.37
Contrast
0.00
Channel Blend
Atmo
Vol: 3,1 dB
Pan: Center
Music
Vol: 3,1 dB
Pan: Center
Rate: 1,00
Complete: 00:00:19
Eventname.mp4
Eventname.mp3
Eventname.mp3

FIGURE *Timeline-based envelope animation*

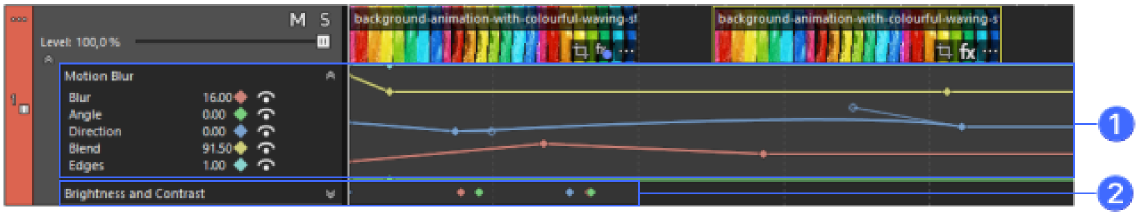
Create keyframes on the timeline

PREREQUISITE

Verify that VIEW | SHOW OFX EFFECT ENVELOPES (BETA) is enabled so OFX envelopes appear on the timeline (disabled by default).

1. Decide where you want the animation to apply:

1	Track level	The effect applies to **all events on the track** and its envelope **spans the entire track**.
2	Event level	The effect applies to this clip only and its envelope appears **within the clip**.


M S
background-animation-with-colourful-waving-s
background-animation-with-colourful-waving-s
1
2

Level: 100,0 %
Motion Blur
Blur 16.00
Angle 0.00
Direction 0.00
Blend 91.50
Edges 1.00
Brightness and Contrast

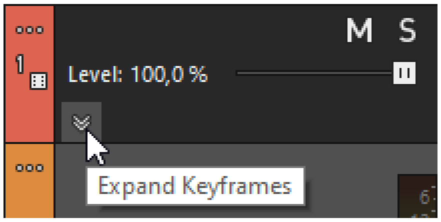
FIGURE *Timeline envelopes. 1 Track-level envelopes span the entire track. 2 Event-level envelopes appear only within the clip.*

2. In the VIDEO FX window, drag the effect to either **the event** (event level) or the **track header** (track level).

3. In the effect UI, click ANIMATE next to each parameter you want to animate.

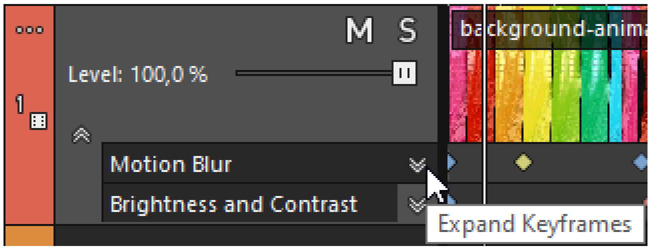
   If you used a preset, an initial **keyframe (point)** is typically created at the start with the preset value.

4. On the timeline, click EXPAND TRACK KEYFRAMES in the track header.


M S
Expand Keyframes

Level: 100,0 %

5. Click the effect's EXPAND KEYFRAMES button for your selected effect to show the parameter envelopes.



6. Add more keyframes where needed:
    - Double-click the envelope, or:
    - Right-click the envelope and choose ADD POINT.
7. Adjust values and curves: drag keyframes, or right-click a keyframe to enter an exact value or choose a curve type.

    For more information, see Adjust values and curves
8. Play the project to preview the result.

Adjust values and curves

To adjust values and curves directly on the timeline, use the context menu. Where you right-click determines the scope of the command:

- **Keyframe area** (blank lane background): actions for all visible envelopes or to show/hide envelopes.
- **Target envelope** (the line): actions for this specific parameter’s envelope.
- **Keyframe** (the node/point): actions for the selected keyframe only.

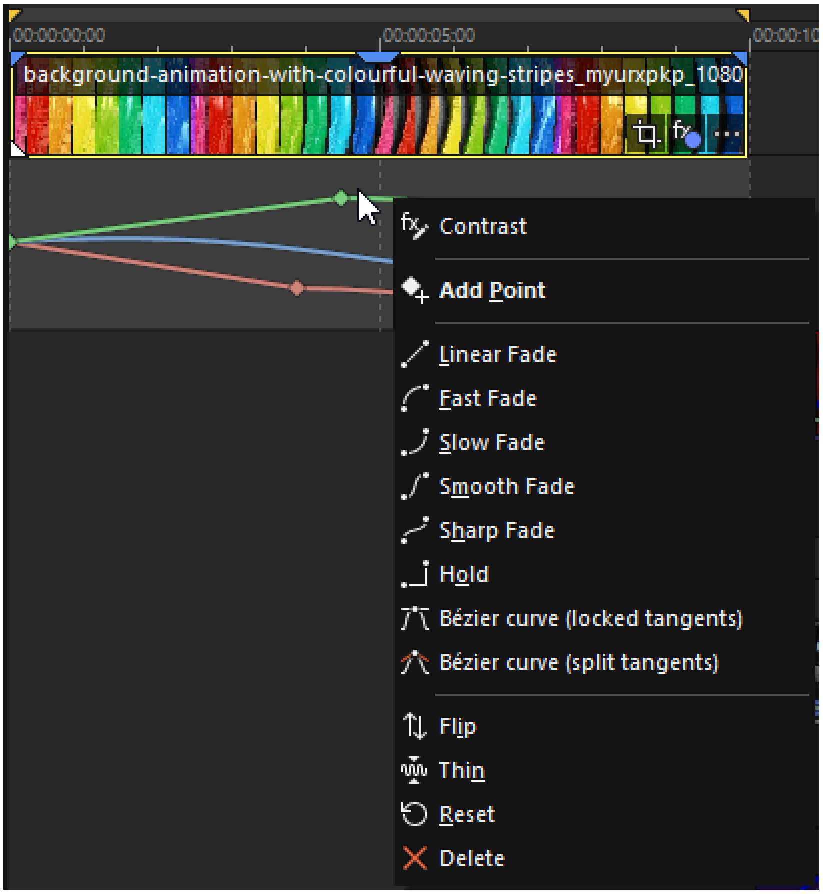

00:00:00:00
00:00:05:00
00:00:10
background-animation-with-colourful-waving-stripes_myurxpkp_1080
Contrast
Add Point
Linear Fade
Fast Fade
Slow Fade
Smooth Fade
Sharp Fade
Hold
Bézier curve (locked tangents)
Bézier curve (split tangents)
Flip
Thin
Reset
Delete

FIGURE *Timeline envelope context menu for editing keyframes and curves*

Add keyframes:

- On a single envelope: right-click the **target envelope** ▶ ADD POINT (inserts a keyframe (point) at the cursor time).
- On all visible envelopes: right-click in the **keyframe area** ▶ ADD POINT.

Set exact values or choose a curve:

» Right-click a **keyframe** to enter a numeric value or select a curve type (e.g., LINEAR, EASE, SLOW, SMOOTH, SHARP, HOLD, BÉZIER).

Utilities for the envelope shape:

» Right-click the **target envelope** and choose FLIP (invert around mid value) or THIN (reduce intermediate keyframes while preserving the overall shape).

Show/Hide and cleanup:

- Right-click the **keyframe area** to show or hide parameter envelopes.
- Use RESET to remove all keyframes for the current parameter (flat envelope), or:
- DELETE to remove the selected **keyframe**.
- Use **Undo** if you remove keyframes by accident.

> **NOTE**
> Only one plug-in's animation controls are visible at a time. However, you can adjust the timing of collapsed envelopes without affecting their values.

Bézier curve types for OFX automation

Bézier curves allow you to customize the animation curve between keyframes when automating OFX parameters. This gives you more precise control over transitions and timing when animating effects.

> **USE CASES**
> - Adjust automation curves for smooth or sharp parameter transitions
> - Mimic analog or natural movement in effects
> - Create highly customized animation flows between keyframes

How to apply Bézier curves to OFX animation

1. Add an OFX plug-in to your project.
2. Click the ANIMATION button for the parameter you want to animate.
3. In the animation timeline section, click the CURVES tab.
4. Double-click the animation envelope to add a point to it.
5. Right-click the newly added point. In the context menu, you see all of the normal options, including the standard curve shapes.

- Bézier curve (locked tangents):

  Choose this option to add Bézier tangents that cannot be moved independently from one another. As you move one handle, the other handle moves in an equal-but-opposite manner. This causes the curves on both sides of the automation point to adjust regardless of which of the two handles you manipulate.

- Bézier curve (split tangents):

  Choose this option to add Bézier tangents that can be manipulated independently of one another. This enables you to adjust the curve on one side of the envelope point without affecting the curve on the other side of the point.

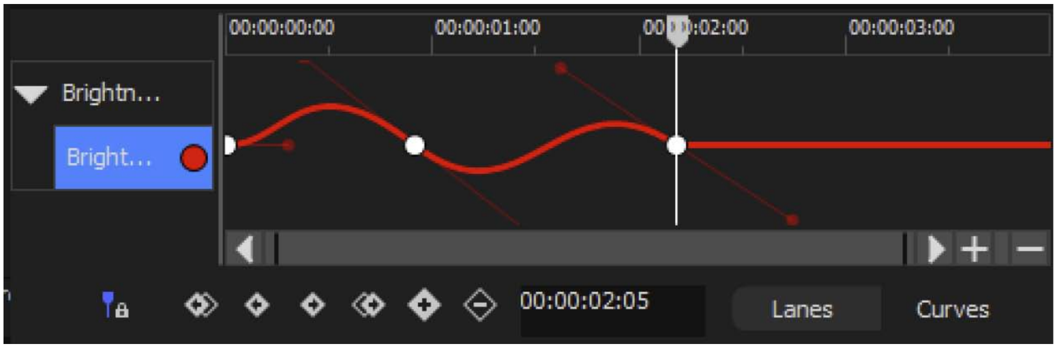


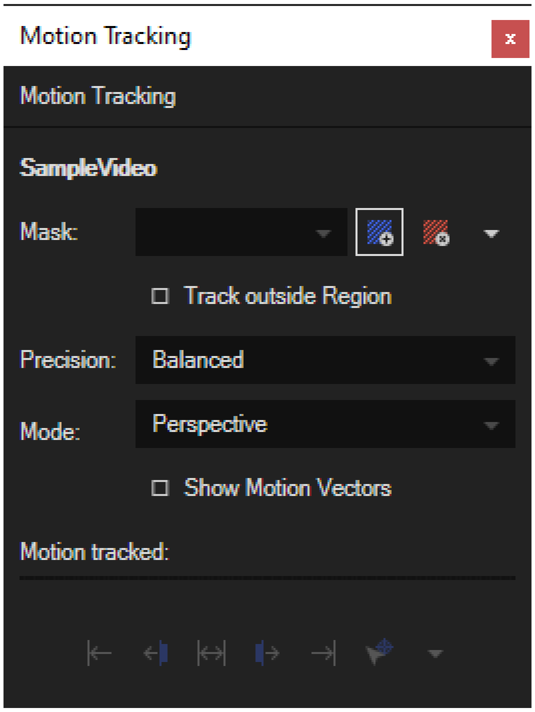
FIGURE *Bézier handles for OFX automation*

NOTE
Old projects in which you used the Manual curve controls will be updated to use these new Bézier controls if you open those projects in this new update of VEGAS Pro or any subsequent update.

FURTHER INFORMATION
Create a Bézier mask

Motion Tracking

With Motion Tracking it is possible to select a screen area and detect the motion in this area in the scene. The detected motion can be used in various ways. So, for example you could use it to let a masked pixelate effect follow someones face to anonymize it or attach a hat on someones head.


Motion Tracking

Motion Tracking

SampleVideo

Mask:

☐ Track outside Region

Precision: Balanced

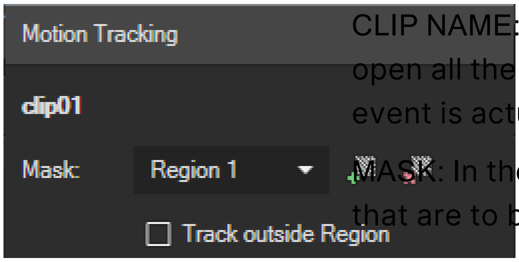
Mode: Perspective

☐ Show Motion Vectors

Motion tracked:

To track motion in a video event:

1. Select the event and open the MOTION TRACKING dialog window. You can open it from the TOOLS menu | VIDEO | MOTION TRACKING, the event's context menu, MORE ··· button or with the keyboard shortcut Alt + M.



CLIP NAME: The Motion Tracking panel can stay open all the time, so it is important to see, what event is actually being tracked.

MASK: In the list box, you can select from all regions that are to be tracked or contain motion tracks.

To add a region, click the + button

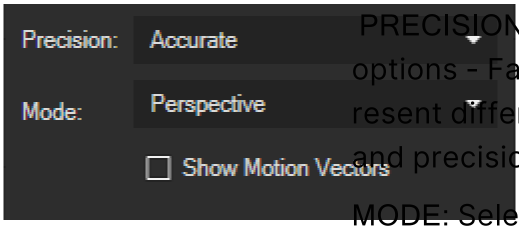
.

To remove the currently selected region, click the - button

.

The motion track import menu is only shown if a Bézier Mask or Picture-In-Picture FX is applied to the clip from which motion can be imported.

TRACK OUTSIDE MASK: Inverts the mask so the non-masked area of the frame is processed. (When the mask is outside the frame, the whole frame is processed then)



Precision: Accurate

Mode: Perspective

☐ Show Motion Vectors

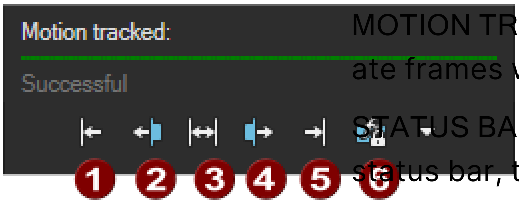
PRECISION:Choose from three different precision options - Fast, Balanced or Accurate - which represent different trade-offs between processing time and precision.

MODE: Select the type of movement to be determined

- LOCATION: x/y position Shift detection
- ROTATION & LOCATION: detection of position Shift and rotation
- SCALE & LOCATION: detection of position Shift and scale changes
- SHAPE & LOCATION: detection of affine transformation (all of the above + shearing)
- PERSPECTIVE: detection of perspective transformation.

SHOW MOTION VECTORS: This shows detected motion vectors. This is particularly helpful when the tracked motion goes wrong because it shows which motion the algorithm is actually detecting (and which not)

NOTE The motion vectors are not persistent and will not be stored in the project file.



MOTION TRACK INDICATOR: Green segments indicate frames with motion data.

STATUS BAR: Below the Motion track indicator is a status bar, that gives information about the success of the tracking or how and why thetracking had to stop.

TRACK BUTTONS: You control the tracking process with the track buttons. Starting from the play cursor position you can track forward (5), in both directions (3) or backwards (1). Then the tracking goes in the specified direction until the clip border was reached or the mask was lost. You can also manually track frame-by-frame with the track one frame forward (4) or backward (2) button.

MOTION TRANSFER MENU: (6)This button opens a multi-level menu in which you can select a target Event FX to which the mask motion is to be transferred. The top level contains all suitable target events, these are the event itself and any other event that shares time positions with the tracked event. On the second level all suitable FX on these events are shown and you can also add a Bézier Mask FX there. The third level contains all FX parameters that represent location data.

2. Click the ADD MASK button . On the Preview window, a rectangle is displayed. It defines the area of the screen where the algorithm tries to detect movement.
3. Place the play cursor at a time position where the object to be tracked is clearly visible and adjust the corners of the mask to ensure that the moving object is enclosed by the MASK as completely as possible, with as little background as possible.

4. Click the TRACK BOTH DIRECTIONS button (3) to start the tracking. If everything went fine, the movement is tracked from the start to the end of the object. Quite often however, the tracking will stop at some point in the video, if for some reason the mask can no longer track the movement.
5. Then you could adjust the mask frame and track the motion frame-by frame with the Track one frame forward (4) or backward (2) button. Or you could move the play cursor to some other point in the video, adjust the mask there and start the tracking again.
6. When the tracking was successful (the motion track indicator is mostly or complete green) you can transfer the motion data to an effect on another event. Click the Motion transfer menu button (6) and select the event, the effect and the parameter that should use the motion data.

Remarks:

- The tracking data are event envelopes. When they are transmitted from the tracked event, their timing is relative to the event. For example, if you track the movement in a clip and transfer it to a graphic on the track above with a picture-in-picture effect so that the graphic follows the moving object, the event with the graphic must not be moved in time afterwards, otherwise the tracking data will not be correct.
- The Motion Tracking feature is no longer part of the BÉZIER MASKING FX. To use BÉZIER MASKING with Motion Tracking, track the motion data and create the Bézier masking FX from the TRANSFER MOTION DATA MENU
- You can track different moving objects in the same event by using several masks.

Import Mocha Tracking Data

1. To import the motion tracking data from Mocha into VEGAS Pro, first export the data from Mocha in the **Silhouette Corner Pin** format, if you’re exporting tracking data, and the Mocha shape for AE format if you’re exporting shape data.

2. In VEGAS Pro, click the MORE ··· button on the event to which you want to apply motion tracking. Choose MOTION TRACKING from the menu.

3. In the MOTION TRACKING window, click the MASK drop-down arrow and choose IMPORT FROM MOCHA from the list. Navigate to the location where you saved the Mocha tracking data you exported, select that file, and click OPEN.

The Mocha tracking data is now imported into the VEGAS Pro motion tracker and you can use it just as if you had generated that data inside VEGAS Pro.

Mocha Vegas

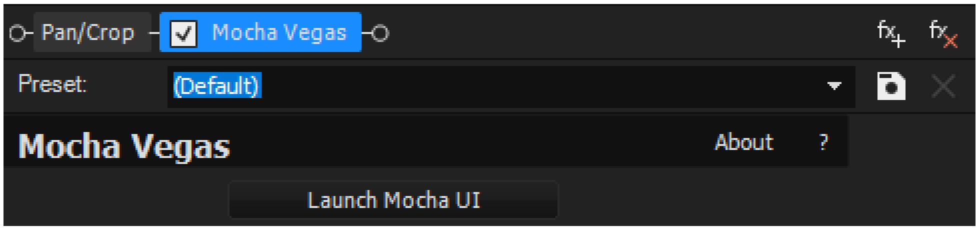
This version of the Mocha motion tracking tool has been developed by Boris FX specifically for use in VEGAS Pro. You can invoke the software from inside VEGAS Pro and perform all the sophisticated motion tracking that this industry-standard tool offers. Once you've created the tracking data inside Mocha, you can easily transfer that data to the VEGAS Pro Motion Tracking tool and apply it to your project in all the normal ways. You can also apply the tracking data to the Stabilization tool in VEGAS Pro for great video stabilization results.

For more information about **Boris FX Mocha Pro** click here.

Adding Mocha VEGAS to your project

Mocha VEGAS is an OFX plug-in, so use all the normal techniques to add it to your project.

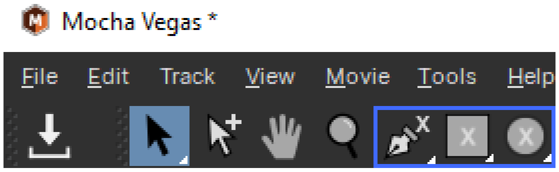
1. Place your cursor at the beginning of the event on your timeline, for instance, to add it to an event on your timeline that needs tracking.
2. Click the VIDEO FX tab.
3. Select MOCHA VEGAS from the list of plug-ins.
4. Drag the DEFAULT preset onto the event.
5. In the VIDEO EVENT dialog box, click the LAUNCH MOCHA UI button.



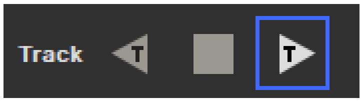
This starts the Boris Mocha application and it opens with your clip already loaded into it. Now you can use all the deep tools of Mocha to create your tracking.

Performing Motion Tracking

1. Create a quick mask over the object you want to track. Tip: To keep things simple for this training, use the Spline, Rectangular, or Elliptical tool.

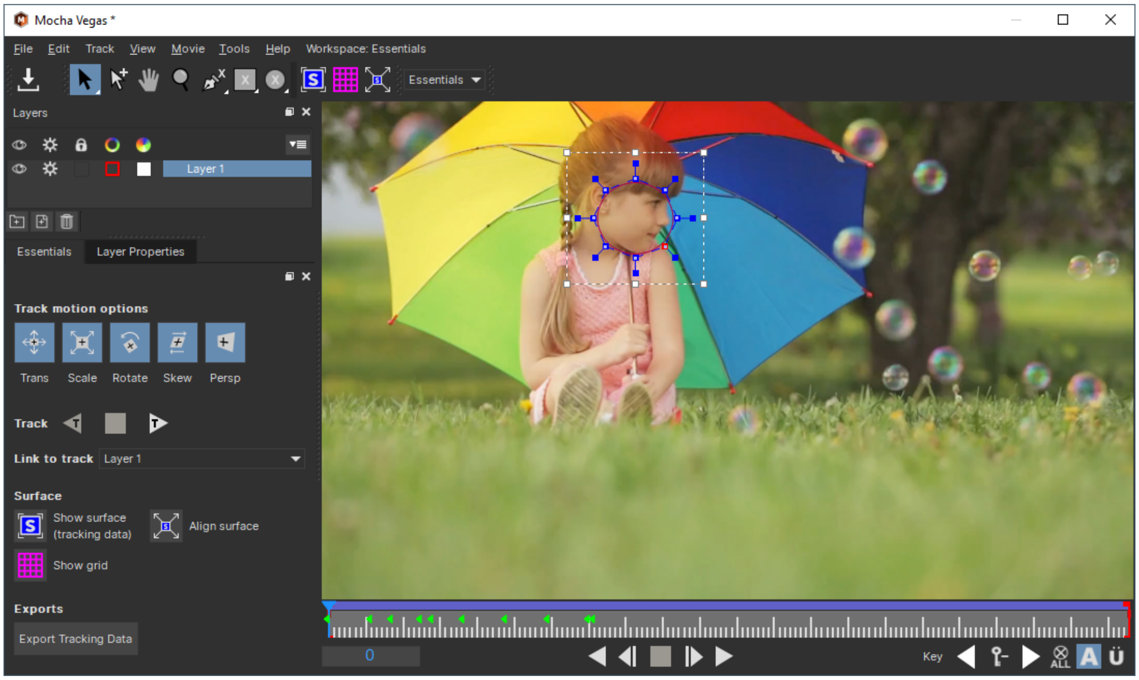

Mocha Vegas *
File
Edit
Track
View
Movie
Tools
Help

2. Click the Track Forward button to start the tracking process.



When tracking is complete, notice that you have a layer in your Layers list.

3. Rename that layer if you want to.
4. Choose FILE | SAVE PROJECT to save your work.
5. Choose FILE | EXIT to close Mocha.


Mocha Vegas *
File
Edit
Track
View
Movie
Tools
Help
Workspace: Essentials
Essentials
Layers
Layer 1
Essentials
Layer Properties
Track motion options
Trans
Scale
Rotate
Skew
Persp
Track
Link to track
Layer 1
Surface
Show surface (tracking data)
Align surface
Show grid
Exports
Export Tracking Data
0
Key

Applying Tracking Data in VEGAS Pro

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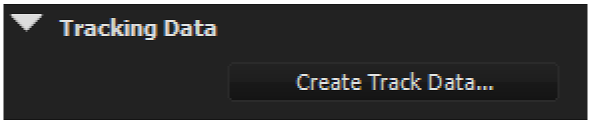
1. Bringing Tracking Data into VEGAS Pro
   - In the VIDEO FX window, click the Expand arrow for the TRACKING DATA section.
   - Click the CREATE TRACK DATA... button.

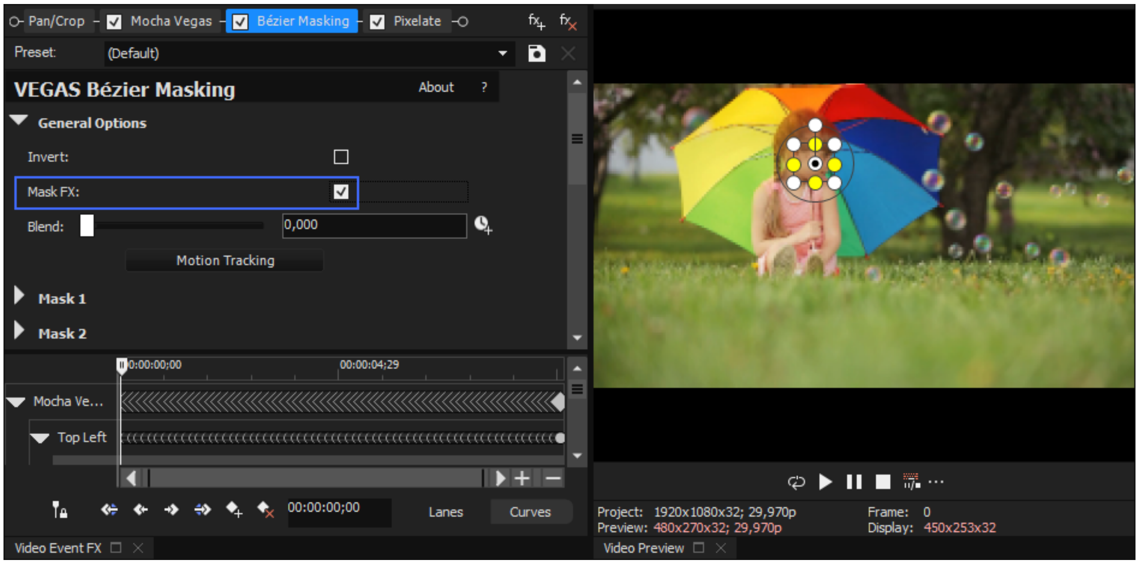
   

   - Select the layer you created back in Mocha from the LAYER CONTROLS dialog box and click OK.

   You can now see the calculated tracking data in the plug-in.
2. Creating a Matching Mask in VEGAS Pro
   - Click the CREATE MASKS... button to add a Bézier Masking plug-in to your FX chain to create a mask in VEGAS Pro to match the tracking mask you made in Mocha. You can see in the VIDEO PREVIEW window that the mask has been applied.
3. Adding effects

   Say you want to obscure the object you track, like a face, for instance.
   - From the VIDEO FX window, select Pixelate from the list of effects.
   - Add one of the presets to your effects chain in front of the Bézier Masking plug-in.
   - Adjust your pixelization settings until you’re happy with the results.
   - In the Bézier Masking plug-in, expand the General Options section and select the Mask Effects checkbox.

     You now have a pixelated, tracked ojbect. Play your VEGAS Project to see the results.


Pan/Crop
Mocha Vegas
Bézier Masking
Pixelate
VEGAS Bézier Masking
About
?
General Options
Motion Tracking
Mask 1
Mask 2
00:00:00;00
00:00:04;29
Mocha Ve...
Top Left
Lanes
Curves
Video Event FX
Video Preview

Preset: (Default)
Invert: ☐
Mask FX: ☑
Blend: 0,000
00:00:00;00
Project: 1920x1080x32; 29,970p
Preview: 480x270x32; 29,970p
Frame: 0
Display: 450x253x32

Exporting Tracking Data

You can also send the Mocha tracking data to the VEGAS Pro Motion Tracking tool.

1. In the Mocha VEGAS plug-in, click the APPLY EXPORT button.

   This applies the tracking data to the VEGAS Pro Motion Tracking tool and opens the Motion Tracking dialog.

   If you followed the instructions above, you already have a Bézier mask listed in the Mask list.

2. Click the drop-down arrow and choose Mocha 1 from the list.

3. Click the Motion Track Transfer Menu drop-down to specify how you want to apply your motion tracking.

Inserting Subtitles

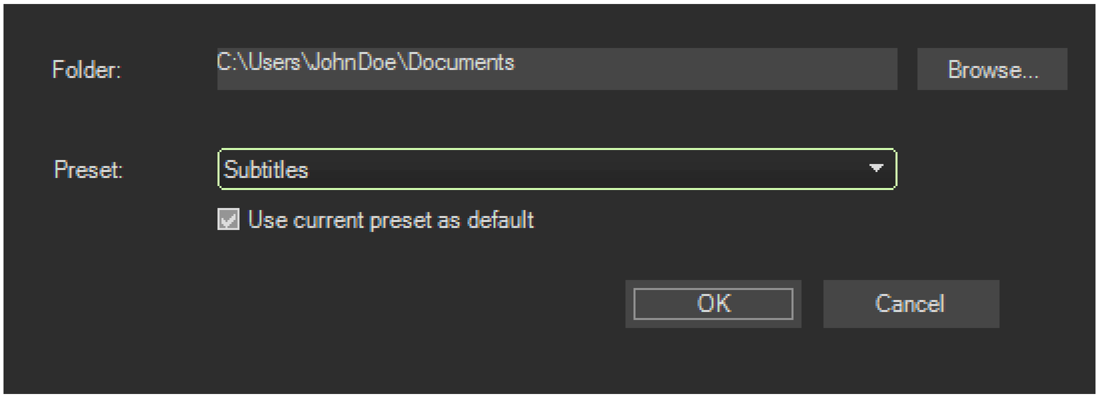
Subtitles are text overlays on a video that translate or transcribe the spoken dialogue, making content accessible to a wider audience. They cater to viewers who may not understand the original language or are hearing impaired, enhancing their viewing experience.

Add subtitles to your video by:

- Importing them from a TXT or CSV file.
- Creating regions and converting them into subtitles.
- Utilizing closed caption features to add subtitles to video files.
- Automatically generate subtitles in multiple languages using the AI Speech to Text feature.

Inserting subtitles from a file

To import text to the timeline, for instance as subtitles for video clips, choose INSERT SUBTITLES FROM FILES from the INSERT menu. This opens the INSERT SUBTITLES dialog:



Folder: C:\Users\JohnDoe\Documents

Preset: Subtitles

☑ Use current preset as default

1. Click the BROWSE button to open a file, you can use the TXT or CSV file format:
    - If you use a simple .txt file containing only the desired subtitles, a title event is created from every line in the file. The events start from the beginning of the project and have a default length of 5 seconds each.
    - If you want to place the text precisely with the right time positions and length, then you can use the .txt or .csv format. The CSV format is a simple database format, where one record is one text line with values stored in text format, separated by commas (hence the name csv, comma separated values). If you use a .txt file, separate each chunk of information with tabs. In this case, each line in the file must be in the following format: "Timecode Start, Timecode End, Timecode Length, Subtitle Text". The Timecode has to

be formatted as hh:mm:ss;ff (hh:hour, mm:minutes,ss:seconds, ff:frames) when your project timeline format is set to the default SMPTE Drop (29.97 fps Video) setting.

2. Choose the text preset that you want to use for the title events from the PRESET drop-down list . When you select the USE CURRENT PRESET AS DEFAULT option, the chosen preset becomes the default that will be used when you use this function in the future.
3. When you click OK, the dialog is closed and a new track is created as the top track in your project, and contains the title events with the text from the file.

Inserting subtitles from regions

You can also create subtitle from named regions in the project:

1. Select the time span where a subtitle should be created and press the R key.
2. A new region is created and a text entry field is shown for the region to name it. Enter your subtitle content here.
3. Repeat step 1 and 2 for all subtitles you want to create.
4. Choose INSERT SUBTITLES FROM REGIONS from the INSERT menu. This opens the INSERT SUBTITLES FROM REGIONS dialog:
5. Choose the text preset that you want to use for the title events from the PRESET drop-down list . When you select the USE CURRENT PRESET AS DEFAULT option, the chosen preset becomes the default that will be used when you use this function in the future.
6. When you click OK, the dialog is closed and a new track is created on topmost in the track list containing the title events with the text from the Region names.

Adding closed captioning to video files

Closed captions help make your video productions accessible to a wider audience. Closed captions are widely used by viewers who are deaf or hard of hearing, those who are learning to read, or who are learning a second language.

Closed captions can be turned on or off by the viewer (unlike open captions, which are always displayed). Closed captions display spoken dialogue and sound effects as on-screen text.

NOTE

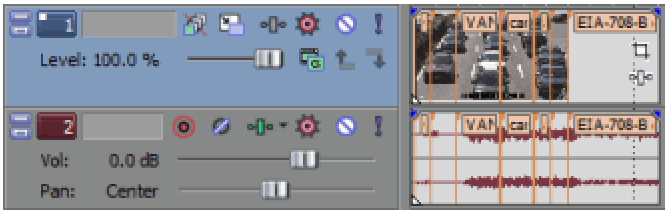
- VEGAS Pro supports CEA608 captions and CEA708 containers containing CEA608 captions.
- When rendering to XDCAM HD/HD422, CEA608 data is uplifted to CEA708 format so that CEA608 and CEA708 captions are available when playing via HD SDI. CEA608 CC1 is uplifted to CEA708 Service 1, and CEA608 CC3 is uplifted to CEA708 Service 2. Please note that caption positions can be slightly different after uplifting to CEA708.
- When you render to a format that does not support embedded captioning markers, an .SCC file is created using the base name of the rendered media file.

Importing or rendering closed captions in an MXF or MPEG-2 file

Importing captions

VEGAS Pro supports closed captioning embedded in XDCAM HD/XDCAM HD422 MXF and MPEG-2 files. ATSC and SCTE formats are supported when reading captions in MPEG-2 files.

When you add media to the timeline or Trimmer, embedded captioning markers are displayed as media markers:



Level: 100.0 %

Vol: 0.0 dB

Pan: Center

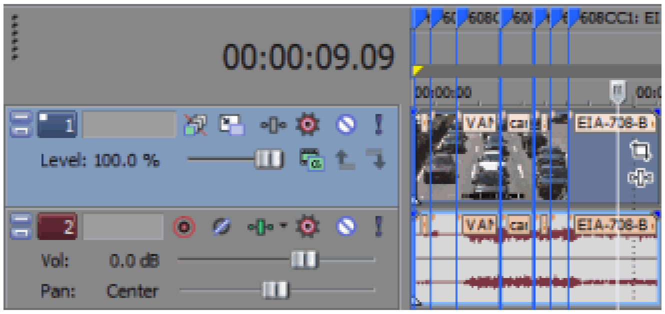
Markers are aligned with the start of captioning for paint-on captions or with the display time for pop-up style captions.

When the captioning markers are read, VEGAS Pro creates an .SCC file in the media file's folder using the same base name as the media file. The .SCC file is used when you use the media in the future so the application doesn't need to scan the media again.

When you're finished editing your project, you can promote the embedded captioning markers to the timeline:

1. Select events with captions.
2. From the Tools menu, choose SCRIPTING, and then choose PROMOTE MEDIA CLOSED CAPTIONING.

   The markers appear as command markers on the timeline, and you can move and edit the markers as needed:



Level: 100.0 %

Vol: 0.0 dB

Pan: Center

Rendering captions

You can export captions in rendered media and in standalone .SCC files.

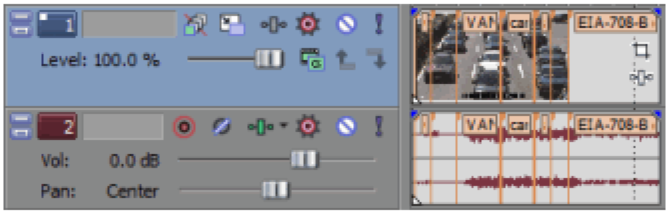
- When you render to XDCAM HD/XDCAM HD422 MXF formats, captioning markers are embedded in the media file. An .SCC file is also created using the base name of the rendered media file.
- When you render to MPEG-2 format, captioning markers are encoded in ATSC format.
- When you render to a format that does not support embedded captioning markers, an .SCC file is created using the base name of the rendered media file.

Importing or rendering Line 21 closed captions

Importing Line 21 captions

VEGAS Pro reads embedded Line 21 captions when you import a media file with a frame size of 720x486 pixels (or taller) and a frame rate of 29.97 fps.

When you add media to the timeline or Trimmer, embedded captioning markers are displayed as media markers:



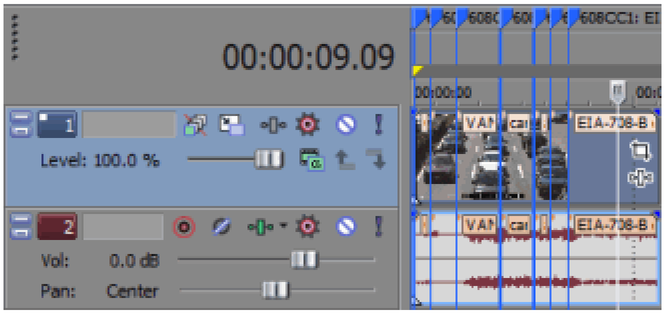
Markers are aligned with the start of captioning for paint-on captions or with the display time for pop-up style captions.

When the captioning markers are read, VEGAS Pro creates an .SCC file in the media file's folder using the same base name as the media file. The .SCC file is used when you use the media in the future so the application doesn't need to scan the media again.

When you're finished editing your project, you can promote the embedded captioning markers to the timeline:

1. Select events with captions.
2. From the Tools menu, choose SCRIPTING, and then choose PROMOTE MEDIA CLOSED CAPTIONING.

   The markers appear as command markers on the timeline, and you can move and edit the markers as needed:



Rendering Line 21 captions

Line 21 captions are supported during rendering when using a frame size of 720x486 pixels (or taller) and a frame rate of 29.97 fps.

> **NOTE** Please note that encoding line 21 captions for DVD is not supported. MPEG-2 video for DVD cannot exceed 480 lines of resolution. DVD line 21 captions are embedded as metadata in the MPEG-2 video stream and are not supported.

Importing closed captions from a closed captioning file

If your media does not contain embedded captioning markers, you can import markers from an external file. The following file types are supported:

- Scenarist Closed Caption (.SCC)

  > **TIP**
  >
  > If an .scc file matches the media file name, the captions willbe read automatically when you load a file.
  >
  > For example, if your video file is wildflowers.avi, naming your captioning file wildflowers.avi.scc will allow VEGAS Proto read the captions automatically.

- RealPlayer Captioning Files (.RT)
- SubRip Subtitles (.SRT)
- Windows Media Player Captioning Files (.SMI)

- Transcript or QuickTime Captioning Files (.TXT)
- CPC MacCaption Files (.MCC)

> **TIP** If an .mcc file does not contain CEA608 captions, its CEA708 captions will be converted to CEA608 pop-up captions. Service 1 captions will be imported as 608CC1 captions, and Service 2 captions will be importedas 608CC3 captions.

- DVD Architect Subtitles (.SUB)

» From the File menu, choose IMPORT, and then choose CLOSED CAPTIONING from the submenu.

» In the Open dialog, browse to the file you want to use and click OPEN.

The markers appear as command markers on the timeline, and you can move and edit the markers as needed.

> **TIP** Captioning markers will be placed according to the timecode inthe captioning file. If needed, you can adjust marker positions by applyinga timeline ruler offset before importing the closedcaptioning. For more information, see Time ruler

Synchronizing captions with video

After you import captions, you may need to adjust timing to synchronize the markers with your video.

1. Use the procedure described earlier in this help topic to import captions.
2. Position your video events as desired in the timeline.
3. Choose VIEW | WINDOW | EDIT DETAILS to display the Edit Details window.
4. From the SHOW drop-down list, choose COMMANDS. Your captioning commands are now displayed in the Edit Details window.
5. In the timeline, position the cursor where you want to start inserting captions.
6. Select a row in the Edit Details list to select the first caption you want to insert.

7. Click the PLAY button ▶ to start playback.
8. When you're ready to insert your first caption, press Ctrl+K. The first caption is inserted at the cursor position, the POSITION setting is updated, and the next caption is selected.
9. Press Ctrl+K to insert each subsequent caption.

Adding or editing closed caption markers on the timeline

You can edit closed caption markers on the timeline to adjust caption start times, delete caption markers, edit their contents, or add new markers.

- To add a new marker, click to position the cursor on the timeline and then choose COMMAND from the Insert menu (or press C).

  > **TIP** To create a pop-on caption quickly, type your caption text in the COMMENT box in the Command Properties dialog. Caption markup is added automatically.You can use [BR] to indicate a line break.

- To move a marker, drag the marker tag on the timeline.
- To delete a marker, right-click it and choose DELETE from the shortcut menu.
- To edit a marker, double-click the marker tag.

Use the Command Properties dialog to edit the marker.

Item	Description
Command	Choose 608CC1 for primary-language captions. Choose 608CC3 for secondary-language captions. **NOTE** Notes: • VEGAS Pro also supports 608CC2 and 608CC4 commands for the CC2/CC4 channels. • When rendering to XDCAM HD/HD422, CEA608 data is uplifted to CEA708 format so that CEA608 and CEA708 captions are available when playing via HD SDI. CEA608 CC1 is uplifted to CEA708 Service 1, and CEA608 CC3 is uplifted to CEA708 Service 2.
Parameter	Displays the marker's captioning text. [BR] indicates a line break.

Item	Description
Comment	Type closed caption control commands here. Commands must conform to standard caption markup, and command strings are case and space sensitive. For more information about captioning markup, please see "Captioning markup and examples" in this help topic. **TIP** You can use your keyboard to create standard text and punctuation. To insert special characters and punctuation, use the Character Map (START | ALL PROGRAMS | ACCESSORIES | SYSTEM TOOLS | CHARACTER MAP). For minor edits, you can ignore the markup and edit the displayed text. If you change the length of the text, be aware of the following: {R14In00Wh} means Row 14, Indent 00, White text. Row (two digits) ranges from 01 to 15. Indent (two digits) ranges from 00 to 28 but only in multiples of 4. {TabOff1} means Tab offset 1. Possible values (one digit) are 1, 2, or 3. **IMPORTANT** For each row, indent (In) plus tab offset (TabOff) plus the number of content characters cannot exceed 32.
Position	Type the time you want the command to occur in your project.

Captioning markup reference and examples

Pop-On Caption

A pop-on caption is displayed on the screen as a single element and is cleared or replaced with a new caption. Pop-on captions are most often used for prerecorded captioning.

{RCL}{ENM}{R14In00Wh}{TabOff1}First Row{R15In00Wh}{TabOff1}Second Row{EDM}{EOC}

> **TIP** If you type captioning text in the COMMENT box of the Command Properties dialog and do not specify captioning markup, a pop-on caption is created. You can use [BR] to indicate a line break. Please note that each row is limited to 32 characters.

Roll-Up Caption

A roll-up caption scrolls onto and off the screen two or three lines at a time and is most often used for live captioning.

{RU2}{CR}{R15In00Wh}{TabOff1}First Row

—or—

{RU3}{CR}{R14In00Wh}{TabOff1}First Row{R15In00Wh}{TabOff1}Second Row

—or—

{RU4}{CR}{R13In00Wh}{TabOff1}First Row{R14In00Wh}{TabOff1}Second Row{R15In00Wh}{TabOff1}Third Row

Paint-On Caption

A paint-on caption appears on screen one letter at a time and displayed like a pop-on caption. Paint-in captions are most often used at the beginning of a program.

{RDC}{R14In04Wh}{TabOff3}First Row{R15In04Wh}{TabOff3}Second Row

Captioning Markup

Caption Markup	Description	Usage Notes
{RCL}	Resume Caption Loading	Starts a pop-on caption.
{RDC}	Resume Direct Captioning	Starts a paint-in caption.
{RU2}	Roll-Up Captions-2 Rows	Starts a two-line roll-up caption.
{RU3}	Roll-Up Captions-3 Rows	Starts a three-line roll-up caption.
{RU4}	Roll-Up Captions-4 Rows	Starts a four-line roll-up caption.
{EDM}	Erase Displayed Memory	Cleans the display. Required to remove roll-up and paint-on captions from the screen.
{ENM}	Erase Nondisplayed Memory	Cleans buffered captions from memory.
{EOC}	End of Caption	In pop-up captions, EOC ends the current caption and displays the next caption.
{FlashOn}	Flash On	Causes the caption to blink until new foreground attributes are set.
{TabOff1}	Tab Offset 1	For each row, indent (In) plus tab offset (TabOff) plus the number of content characters cannot exceed 32.
{TabOff2}	Tab Offset 2	
{TabOff3}	Tab Offset 3	
{Backspace}	Backspace	Used for live captioning.
{DelEndRow}	Delete to End of Row	Used for live captioning.
{CR}	Carriage Return	
{R yy Wh}	Row yy [00 to 15], White Text	

Caption Markup	Description	Usage Notes
{R yy WhU}	Row yy [00 to 15], White Underlined	
{R yy Gr}	Row yy [00 to 15], Green Text	
{R yy GrU}	Row yy [00 to 15], Green Underlined	
{R yy Bl}	Row yy [00 to 15], Blue Text	
{R yy BlU}	Row yy [00 to 15], Blue Underlined	
{R yyCy}	Row yy [00 to 15], Cyan Text	
{R yy CyU}	Row yy [00 to 15], Cyan Underlined	
{R yy Rd}	Row yy [00 to 15], Red Text	
{R yy RdU}	Row yy [00 to 15], Red Underlined	
{R yy Yl}	Row yy [00 to 15], Yellow Text	
{R yy YlU}	Row yy [00 to 15], Yellow Underlined	
{R yy Ma}	Row yy [00 to 15], Magenta Text	
{R yy MaU}	Row yy [00 to 15], Magenta Underlined	
{R yy WhI}	Row yy [00 to 15], White Italics	

Caption Markup	Description	Usage Notes
{R yy WhIU}	Row yy [00 to 15], White Italics Underlined	
{R yy In xx Wh}	Row yy [00 to 15], Indent xx [00|04|08|12|16|20|24|28], White Text	For each row, indent (In) plus tab offset (TabOff) plus the number of content characters cannot exceed 32.
{R yy In xx WhU}	Row yy [00 to 15], Indent xx [00|04|08|12|16|20|24|28], White Underlined	
{WhTxt}	White Text	
{WhUTxt}	White Underlined	
{GrTxt}	Green Text	
{GrUTxt}	Green Underlined	
{BlTxt}	Blue Text	
{BlUTxt}	Blue Underlined	
{CyTxt}	Cyan Text	
{CyUTxt}	Cyan Underlined	
{RdTxt}	Red Text	
{RdUTxt}	Red Underlined	
{YlTxt}	Yellow Text	
{YlUTxt}	Yellow Underlined	
{MaTxt}	Magenta Text	
{MaUTxt}	Magenta Underlined	
{ITxt}	Italicized Text	

Caption Markup	Description	Usage Notes
{IUTxt}	Italicized Underlined	
{BgWh}	Background White	
{BgWhSemi}	Background Semitransparent White	
{BgGr}	Background Green	
{BgGrSemi}	Background Semitransparent Green	
{BgBl}	Background Blue	
{BgBlSemi}	Background Semitransparent Blue	
{BgCy}	Background Cyan	
{BgCySemi}	Background Semitransparent Cyan	
{BgRd}	Background Red	
{BgRdSemi}	Background Semitransparent Red	
{BgYl}	Background Yellow	
{BgYlSemi}	Background Semitransparent Yellow	
{BgMa}	Background Magenta	
{BgMaSemi}	Background Semitransparent Magenta	
{BgBlk}	Background Black	

Caption Markup	Description	Usage Notes
{BgBlkSemi}	Background Semitransparent Black	
{BgTran}	Background Transparent	
{BlkTxt}	Black Text	
{BlkUTxt}	Black Underlined	
{StdCharSet}	Standard Character Set	You can use the character set commands to switch between character sets in your captions. For example, if you needed to display Korean characters in an English-captioned program, you could use {KORCharSet} to display Korean characters and then use {StdCharSet} to switch back to English captions.
{DSzCharSet}	Double Size Character Set	
{1PCharSet}	First Private Character Set	
{2PCharSet}	Second Private Character Set	
{CHNCharset}	People’s Republic of China Character Set	
{KORCharSet}	Korean Character Set	
{1RgCharSet}	First Registered Character Set	
{TH}	Time Holder	Not used when creating new captions. When you're working with existing captions, captioning data can be transferred ahead of the display time, and {TH} can be used to adjust the display time.

Displaying closed captions in the Video Preview or Trimmer window

You can preview your captions by using overlays in the Video Preview window. For more information, see Using the Video Preview window

> **TIP** Overlay settings from the Video Preview window are also applied to the video monitor in the Trimmer window.

1. Click the down arrow next to the OVERLAYS button ▦ and choose a setting from the menu to turn on the caption type that you want to preview.
2. Play your project.

Exporting closed captions

Some Webcasting formats require that captions be saved in an external file. After creating your captions, you can export them to several formats.

1. Create and edit your captions as described in this help topic.
2. From the Tools menu, choose SCRIPTING, and then choose a command from the submenu:

Item	Description
Export Closed Captioning for DVD Architect	Creates a subtitle (.SUB) file that can be used by DVD Architect software. The .SUB file contains timecode values and text that will be used to create subtitle events in DVD Architect.
Export Closed Captioning for QuickTime	Creates a text (.TXT) and .SMIL file for each subtitle service. The text file contains the captions and formatting, and the .SMIL file contains information that defines how captions will display on the media file. The .SMIL file links to a .MOV file that uses the same base name as your exported captions file by default. You can edit the file to refer to the desired media file name. **TIP** If you're using QuickTime Pro, you can create a QuickTime text track to embed captions in your video file.
Export Closed Captioning for Windows Media Player	Creates a .SMI and .ASX file for each subtitle service. The .SMI file contains the captions and formatting, and the .ASX file contains information that defines how captions will display on the media file. The .ASX file links to a .WMV file that uses the same base name as your exported captions file by default. You can edit the file to refer to the desired media file name.
EXPORT CLOSED CAPTIONING FOR YOUTUBE	Creates an .SRT file that can be used for YouTube captions and by some DVD authoring software. For information about adding subtitles to your YouTube videos, please see http://www.youtube.com.

3. Use the Save dialog to specify a file name and folder for your captions file, and then click SAVE.

Editing multiple captions with the Edit Details window

The Edit Details window allows you to see all of your project's captions at once for quick editing. For more information, see Using the Edit Details Window

You can even edit multiple captions at once. For example, if you wanted to change your 608CC1 (primary language) captions to 608CC3 (secondary language), perform the following steps.

1. Choose VIEW | WINDOW | EDIT DETAILS to display the Edit Details window if it isn't already visible.
2. In the Edit Details window, choose COMMANDS from the SHOW drop-down list. Your closed caption markers are displayed.
3. Select the captions you want to edit:
    a. Hold Shift and click in the COMMAND column for the first caption you want to change.
    b. Hold Shift and click in the COMMAND column for the last caption you want to change.

       All captions between the first- and last-selected rows are selected.
4. Right-click the COMMAND column for any selected caption and choose EDIT from the shortcut menu.
5. Type a new value in the box — in this case, you'd type 608CC3 — and press Enter.

   All selected captions are changed to 608CC3.

Captioning Windows Media files

Captioning increases the reach of your multimedia productions by making them accessible to a wider audience, and VEGAS Pro makes it easy for you to add captioning.

Adding captioning to a streaming Windows Media Video presentation

1. Arrange your audio and video files on the timeline to create your project.
2. Add a Text command for each line of captioning text:
   a. Position the cursor where you want to add a caption.
   b. From the Insert menu, choose COMMAND. The Command Properties dialog is displayed.
   c. From the COMMAND drop-down list, choose TEXT.
   d. In the PARAMETER box, enter the captioning text you want to display.
3. Repeat step 2 as necessary.
4. Render your file in Windows Media Video format.

   For more information, see Rendering your project

   > **NOTE** The following step is optional. If you choose not to embed the Windows Media Player in a Web page, be sure to instruct your audience to turn on captioning.

5. Create an HTML page with the Windows Media player embedded in it.

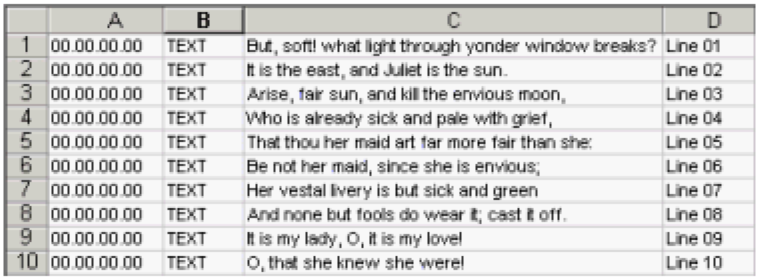
Entering captioning text from a script

The previous method of entering captions is fine for small projects that contain relatively few captions, but what if you're working with a large project that requires many captions? No problem. You can easily create captioning markers from a spreadsheet or other tab-delimited format.

1. Create a list of each caption you want to insert:
   a. Create a four-column, tab-delimited spreadsheet.
   b. In the first column, enter 00:00:00:00 as a placeholder. The actual time of each caption will be determined later.
   c. In the second column, enter TEXT to specify the command type.
   d. In the third column, enter the text that you want to display as a caption.

> **TIP**
>
> - If you have a script, you can copy the information from the script and paste it into your spreadsheet. Each line should be pasted to its own cell.
> - The VEGAS Pro CD includes a template that you can use to create your captions. The file, VEGAS CAPTIONING SHELL.TXT, is saved in the Sample Projects folder on the CD. Open this file in a database program (you can also use a text editor) and add your captions to the third column.

   e. In the fourth column, enter a label to identify your captions. An entry such as LINE 01 will help you sort the captions in the Edit Details window.



	A	B	C	D
1	00.00.00.00	TEXT	But, soft! what light through yonder window breaks?	Line 01
2	00.00.00.00	TEXT	It is the east, and Juliet is the sun.	Line 02
3	00.00.00.00	TEXT	Arise, fair sun, and kill the envious moon,	Line 03
4	00.00.00.00	TEXT	Who is already sick and pale with grief,	Line 04
5	00.00.00.00	TEXT	That thou her maid art far more fair than she:	Line 05
6	00.00.00.00	TEXT	Be not her maid, since she is envious;	Line 06
7	00.00.00.00	TEXT	Her vestal livery is but sick and green	Line 07
8	00.00.00.00	TEXT	And none but fools do wear it; cast it off.	Line 08
9	00.00.00.00	TEXT	It is my lady, O, it is my love!	Line 09
10	00.00.00.00	TEXT	O, that she knew she were!	Line 10

2. Select the cells in your spreadsheet and copy them to the clipboard.
3. Switch to the VEGAS Pro window and choose VIEW | WINDOW | EDIT DETAILSto display the Edit Details window.
4. From the SHOW drop-down list, choose COMMANDS.
5. Click the comment column heading to sort the captions in ascending order.

6. Right-click the box in the top-left corner of the Edit Details window and choose PASTE from the shortcut menu. The clipboard data is pasted starting at this row.
7. In the timeline, position the cursor where you want to start inserting captions.
8. Select a row in the Edit Details list to select the first caption you want to insert.
9. Click the PLAY button ▶ to start playback.
10. When you're ready to insert your first caption, press Ctrl+K. The first caption is inserted at the cursor position, the POSITION setting is updated, and the next caption is selected.
11. Press Ctrl+K to insert each subsequent caption.
12. Render your file in Windows Media format.

    For more information, see Rendering your project

Compositing video

Compositing is the process of mixing the tracks to create a single layered output.

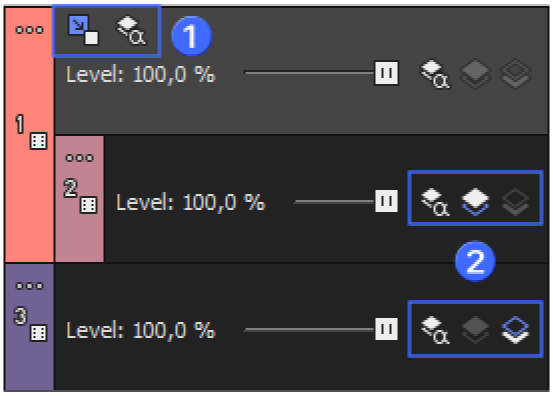
In VEGAS® Pro software you can also adjust the opacity of part or all of a clip, and you can superimpose clips on top of one another for special effects, transitions, or to add different backgrounds.

Compositing and masks

Compositing is the process of mixing video tracks to create a single layered output.

You can use compositing in conjunction with masks to cover portions of video or to limit the effects of a filter. Masks are frequently based on dark versus light areas, specific colors, or an alpha channel.

Click the PARENT COMPOSITE MODE or COMPOSITING MODE button in the track header and choose a mode from the menu to determine how the transparency in a video track is generated. Since lower tracks show through higher tracks, it is the compositing mode of the higher track that determines how much of the lower track shows though. The compositing mode of the lowest video track adjusts its transparency against the background.



Level: 100,0 %

Level: 100,0 %

Level: 100,0 %

1	Parent Composite Mode
2	Compositing Mode

To change the opacity/transparency of all events on the track, drag the LEVEL slider in the track header or use a composite-level envelope to adjust the opacity/transparency over time.

For more information, see [Video track controls]() and [Video track automation]()

To change the opacity/transparency of a single event, you can use an event envelope.

For more information, see [Event envelopes]()

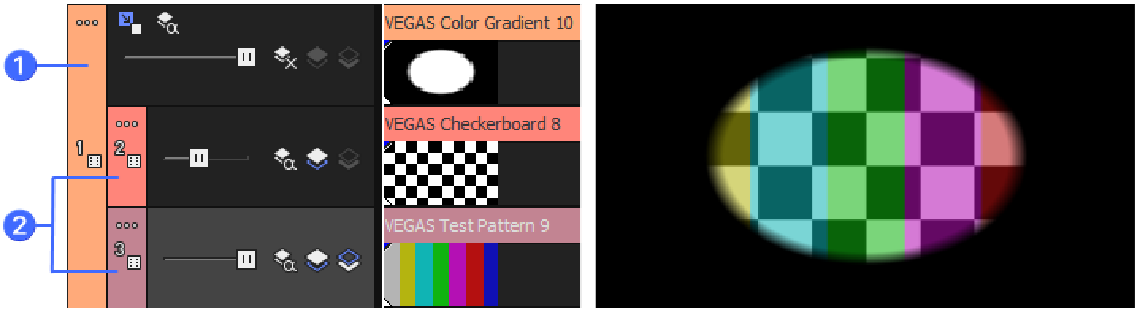
Parent and child tracks

The key to understanding overlays, masks, transparency, and compositing is to understand the parent/child relationship between tracks. In general terms, the parent track is the highest track in a group of tracks (often only two) and the behavior of the child tracks (i.e. how they are composited together) is determined by the parent track.

- Click the MAKE COMPOSITING CHILD button on a parent track to make a child track.

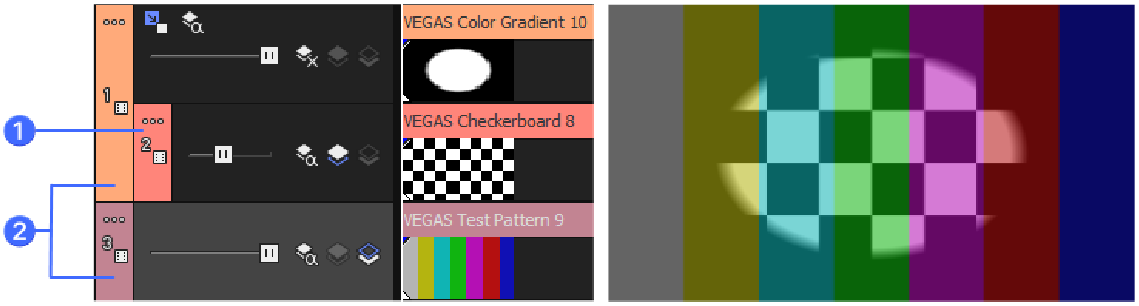
- Click the MAKE COMPOSITING PARENT button on a child track to make a parent track.

In this first example, there are three tracks. Track one contains a mask. The circular region in the mask is transparent, so the second track shows through. The third track is also a child, so it is displayed behind track two.


1
2
VEGAS Color Gradient 10
VEGAS Checkerboard 8
VEGAS Test Pattern 9

1	Parent Track
2	Child Tracks
3	Result

In this example, the third track is also a parent, so it is displayed behind the composite of tracks one and two.

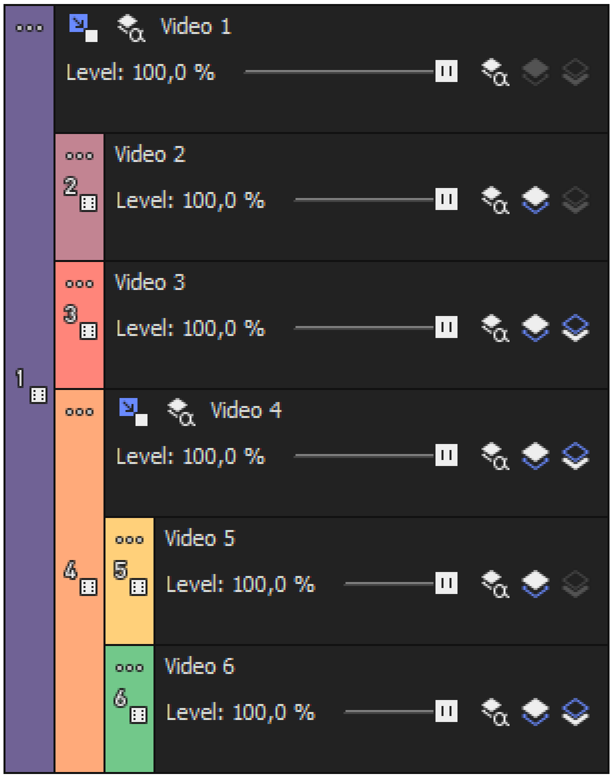

1
2
VEGAS Color Gradient 10
VEGAS Checkerboard 8
VEGAS Test Pattern 9

1	Child Track
2	Parent Tracks
3	Result

You can also produce complex compositing by creating nested parent/child groups with compositing parents and children at various levels.

When you have multiple levels of parent and child tracks, clicking the MAKE COMPOSITING CHILD button moves the track in one level and clicking the MAKE COMPOSITING PARENT button moves out one level.

Hold Ctrl while clicking the MAKE COMPOSITING CHILD button to move a track and all its child tracks in one level.


Video 1
Level: 100,0 %
Video 2
Level: 100,0 %
Video 3
Level: 100,0 %
Video 4
Level: 100,0 %
Video 5
Level: 100,0 %
Video 6
Level: 100,0 %

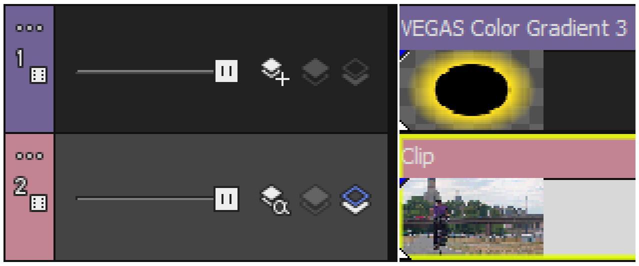
For examples of how parent/child track relationships affect 3D compositing, see [3D compositing]

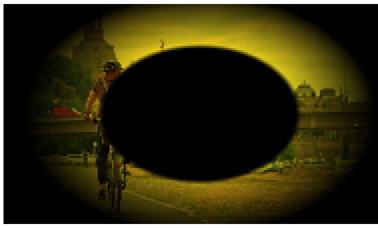
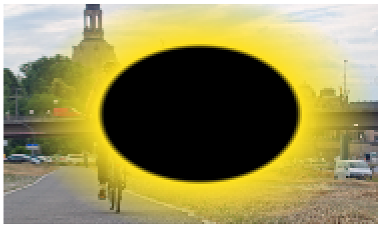
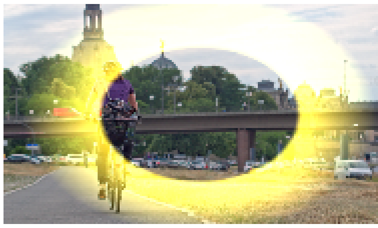
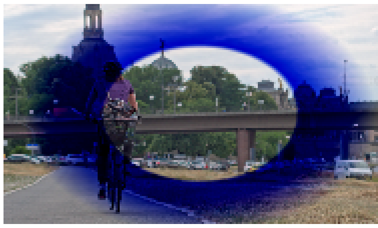
Compositing modes and transparency

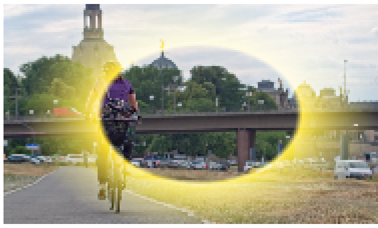
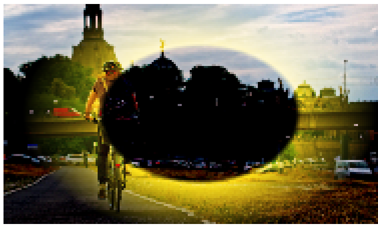
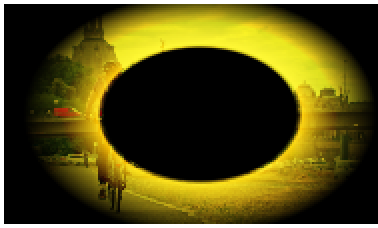
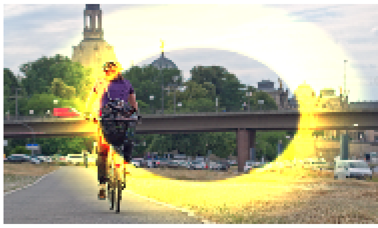
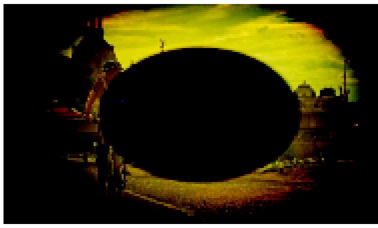
The COMPOSITING MODE button determines how the transparency in a video track is generated. Because lower tracks show through higher tracks, it is the compositing mode of the higher track that determines how much of the lower track shows though. The compositing mode of the lowest video track adjusts its transparency against the background.

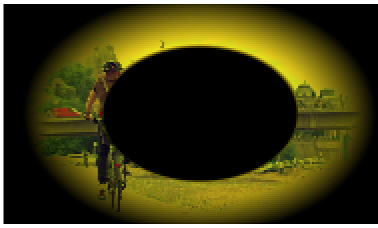
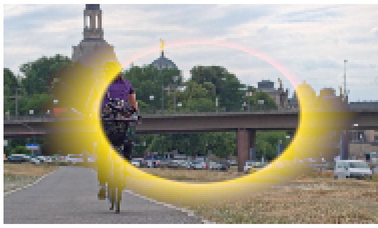
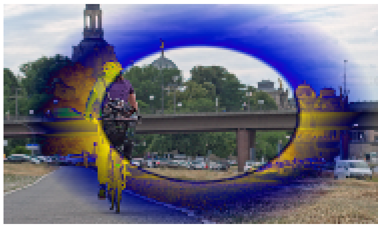
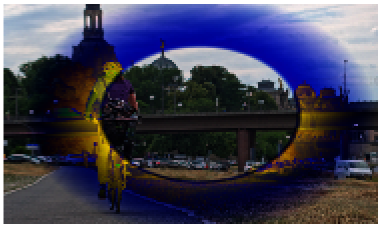
The mode can be selected by clicking the COMPOSITING MODE button and choosing a mode from the menu.

The following examples demonstrate how each of the compositing modes would affect two simple tracks. Track one is a generated media event with a transparent edge.



Mode	Description	Example
Multiply (Mask)	Merges the colors of the tracks.	
Source Alpha	Uses the alpha channel to determine transparency. **NOTE** The compositing mode is based on the alpha channel characteristics of an event or media file. If no alpha channel is present, the SOURCE ALPHA mode has no effect.	
Add	Combines the color values in the composite group.	
Subtract	Subtracts the overlay color values from the background.	
Cut	Cuts out the overlay color values from the background.	

Mode	Description	Example
Screen	Multiplies the inverse of the overlay color values with the background color values. This makes overlay colors weaker and less present and results in a lighter video image. The opposite of this mode is MULTIPLY.	
Overlay	Heightens contrast by using MULTIPLY mode on darker colors and SCREEN mode on lighter colors.	
Hard Light	Adds overlay colors as if the overlay were lit by a bright, focused spotlight.	
Dodge	Brightens the background based on the overlay color values.	
Burn	Darkens the background based on the overlay color values.	

Mode	Description	Example
Darken	Compares the overlay and background pixel by pixel and selects the darker color value for each pixel.	
Lighten	Compares the overlay and background pixel by pixel and selects the lighter color value for each pixel.	
Difference	Compares the overlay and background pixel by pixel and subtracts the darker color value from the lighter color to generate a new color value.	
Difference Squared	Remaps color values along a parabolic curve. The color values of the layers in the composite group are subtracted, and then the subtracted values are squared. The resulting image will have less extreme changes in color values as the colors approach black (RGB 0,0,0) and more extreme changes in color values as colors approach white (RGB 255,255,255).	

Drag the LEVEL slider in a video track to control the transparency or blending of each track. Left is 100% transparent and right is 100% opaque. You can also double-click the percent to enter a specific numeric percentage.

Using a 2-to-1 transform plug-in for custom compositing

When you click the PARENT COMPOSITE MODE or COMPOSITING MODE button and choose CUSTOM from the menu, you can use plug-ins to customize compositing.

The included Displacement Map, Height Map, and Bump Map plug-ins can create interesting lens, mirror, water, fire, and other light-bending effects.

Plug-In	Description
Displacement Map	Uses the parent image as a guide to offset the pixels in the composited child tracks along the horizontal and vertical axes. The X and Y offsets are independently encoded in the image color channels. For more information, see Displacement Map
Height Map	Uses the parent image as a guide to make the pixels in the composited child tracks appear closer to or farther away from the viewer. The gradient of the image in the parent track is used to determine the amount of offset for the image displayed at that location, in much the same way light bends through a lens. For more information, see Height Map
Bump Map	Uses the parent image as a guide to add texture and lighting to the composited child tracks. The texture of the bump map is applied to the composited child tracks: light sections of the map represent high areas, and dark sections represent low areas. For more information, see Bump Map

Compositor Window

The default compositing mode for a video track is SOURCE ALPHA mode.

When you apply a compositing plug-in effect (like the three mentioned above) from the Compositor window, the track will automatically switch to Custom compositing mode. The advantage of adding a compositing plug-in using the Compositor window is efficiency. When adding a compositor, such as Bump Map, as a custom mode, using the Compositor window, the "effect" applies to any and all tracks below. To accomplish the same thing with a regular effect, you'd need to specifically add bump-map to each of the tracks below one-by-one. If you later add another track below, you'd have to remember to add the bump-map effect to that track.

Creating a mask

1. If you have not already done so, place and position the image or video you want to use as a mask on the top-level track in your project.

   For more information, see [Adding media files to your project]

2. Place video files on the tracks below the mask.
3. Ensure your mask is a compositing parent the tracks below are child tracks.
4. Click the COMPOSITING MODE button on the mask track and choose MULTIPLY (MASK) from the menu.

   If your mask image is grayscale, you're done. If not, continue with Step 5.

5. Add the Mask Generator plug-in as a track effect on the mask track and adjust the controls as needed to set transparency in the mask track.

   For more information, see [Mask Generator]

   > **TIP** You can also use the Event Pan/Crop dialog to create event-level Bézier masks. For more information, see [Panning and Cropping Video Events]

> **TIP** Like the Crop OFX is a replacement for the Panning and Cropping window with interactive adjustment directly on the video preview window, there's also a new Bézier Masking OFX. You can create up to five regular formed or Bézier masks in a video track or event. You can also mask an effect from the same effect chain the Bézier Masking OFX is included in, and you can track the content of the video and move and scale the mask according the content under it.
>
> For more information, see Bézier Masking

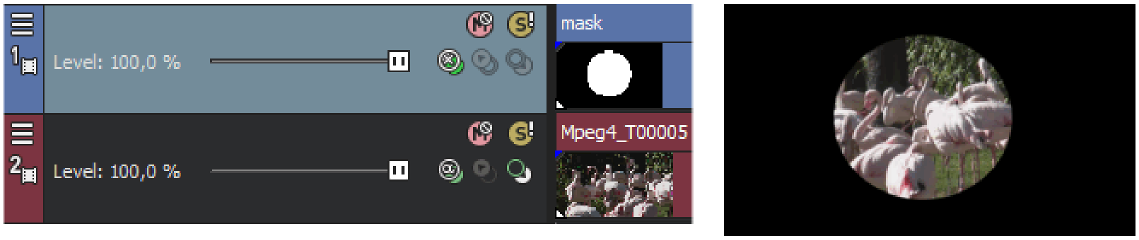

Level: 100,0 %
Level: 100,0 %

FIGURE *Solid-color mask*

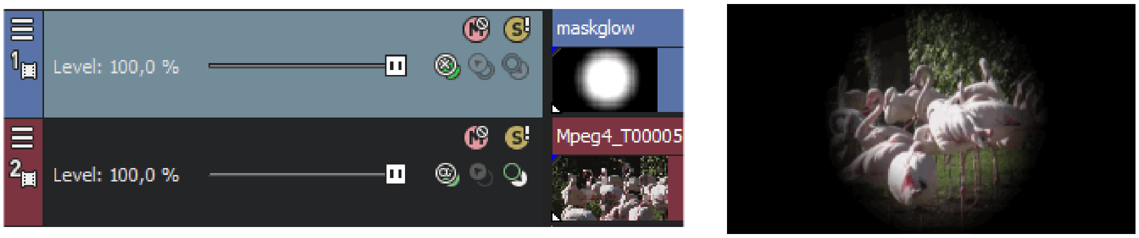

Level: 100,0 %
Level: 100,0 %

FIGURE *Gradient mask*

3D compositing

3D compositing is like track motion on steroids. With 3D compositing, you can move video tracks anywhere in space.

With 2D compositing (and in previous versions of VEGAS Pro), you can move video or images along the X or Y axes, and you can rotate video along the Z axis. With 3D compositing, you can move or rotate along the X, Y, or Z axes to create distance, depth, and perspective.

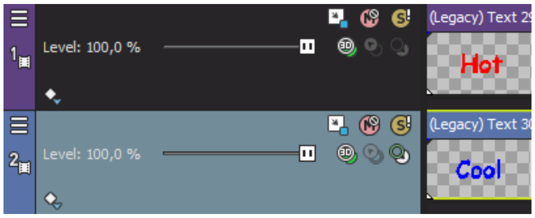
> **NOTE** There are two basic rules to 3D compositing:

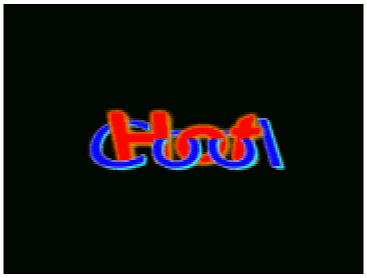
1. When you have a 2D track in the track list, 3D tracks below that track are rendered in 3D and then composited as a 2D image.
2. A 2D track at the root level (flush to the left of the track list) acts as a barrier to interaction between 3D tracks.

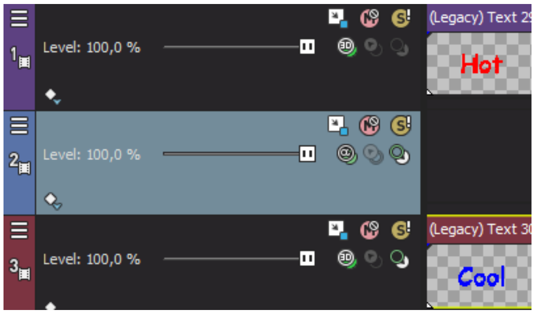
   In the following examples, both text tracks have been rotated in 3D: the "hot" track is rotated toward the user, and the "cool" track is rotated away from the user.

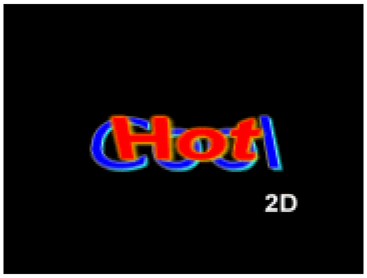
   In the first example, the two tracks intersect along their rotation axis. In the second example, adding a 2D track above the "cool" track causes it to be rotated in 3D and composited as a 2D image so the "hot" text is displayed above it without intersecting:

Tracks **Output**


1
Level: 100,0 %
(Legacy) Text 2
Hot
2
Level: 100,0 %
(Legacy) Text 3
Cool

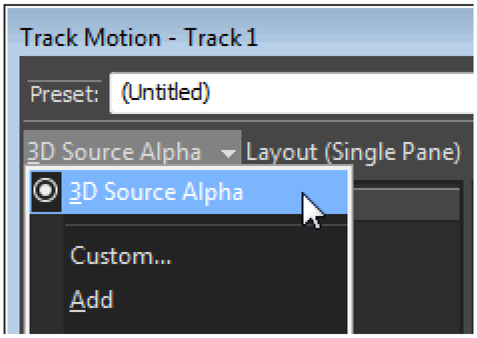



1
Level: 100,0 %
(Legacy) Text 2
Hot
2
Level: 100,0 %
3
Level: 100,0 %
(Legacy) Text 3
Cool

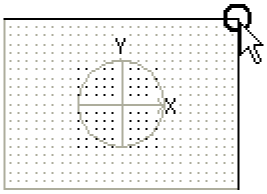


Moving a track in the 3D space

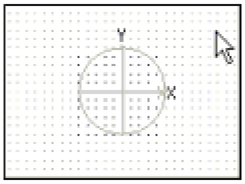
1. Click the TRACK MOTION button on the track that contains the overlay you want to animate. The Track Motion window is displayed.
2. From COMPOSITING MODE drop-down list, choose 3D SOURCE ALPHA.


Track Motion - Track 1
Preset: (Untitled)
3D Source Alpha
Layout (Single Pane)
3D Source Alpha
Custom...
Add

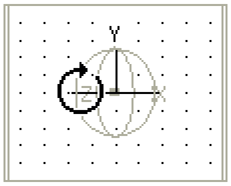
3. Choose a setting from the LAYOUT drop-down list to choose the workspace display you want to use. The LAYOUT setting allows you to see your track from various points of view.
4. Adjust the selection area to change the viewable area of the track and its position in space. You can use the POSITION, ORIENTATION, and ROTATION controls on the left side of the window, or you can drag the selection box in the workspace. When you drag, guides are displayed in bold to indicate how the track will be moved or rotated:



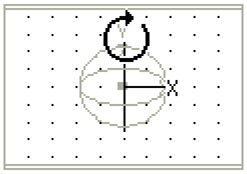
Moving closer to or farther from viewer. Drag across corners to flip the track.



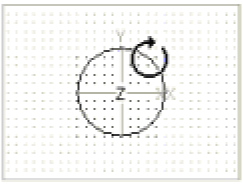
Dragging the track.



Rotating left to right around the Y axis.



Rotating forward or backward around the X axis



Rotating around the Z axis

5. Use the buttons at the top of the dialog to allow or prevent movement or scaling. See the Change editing options heading in this topic for more information.

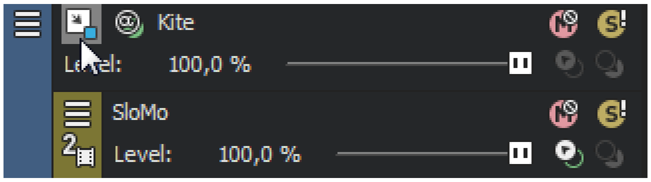
   > **TIP** Right-click the workspace to display a shortcut menu that displays commands to restore, center, or flip the selection box. You can also force the box to match the source media's aspect ratio or your project's output aspect ratio. Matching the output aspect ratio can prevent black bars from appearing when you use source media (such as photographs) that does not match your-project's aspect ratio.

6. The 3D track motion occurs instantly, and the results are updated in the Video Preview window.
7. Use the keyframe controller at the bottom of the Track Motion window to establish distinct track motion settings throughout the duration of the track.
8. During playback, intermediate frames are interpolated to create smooth motion.

   Expand the KEYFRAME INTERPOLATION heading on the left side of the window and drag the SMOOTHNESS slider to adjust the interpolation. For more information about keyframe animation, see Keyframe animation

Moving a group of composited tracks in the 3D space (applying parent motion)

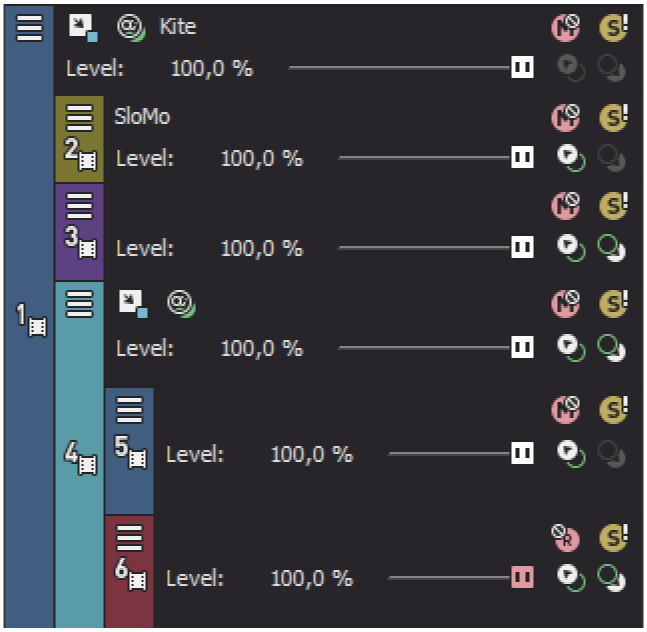
1. Click the MAKE COMPOSITING CHILD button on the tracks you want to group to create a compositing group.
2. Click the PARENT COMPOSITE MODE button on the parent track and choose 3D SOURCE ALPHA.
3. Click the PARENT MOTION button on the parent track. The Track Motion window is displayed.

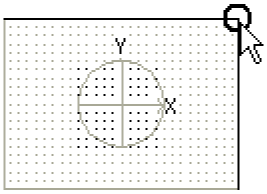
   Parent track motion affects the parent track and all child tracks.

   In the sample track list, parent track motion on track 1 will affect tracks 1 through 6.

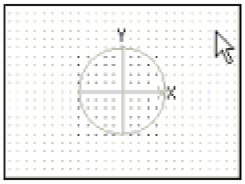
   Parent track motion applied to track 4 will affect only tracks 4 through 6.


Kite
Level: 100,0 %
SloMo
2
Level: 100,0 %
3
Level: 100,0 %
1
Level: 100,0 %
4
5
Level: 100,0 %
6
Level: 100,0 %

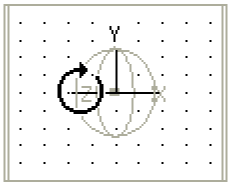
4. Choose a setting from the LAYOUT drop-down list to choose the workspace display you want to use. The LAYOUT setting allows you to see your track from various points of view.
5. Adjust the selection area to change the viewable area of the composite group and its position in space. You can use the POSITION, ORIENTATION, and ROTATION controls on the left side of the window, or you can drag the selection box in the workspace. When you drag, guides are displayed in bold to indicate how the group will be moved or rotated:



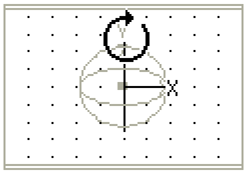
Moving closer to or farther from viewer. Drag across corners to flip the track.



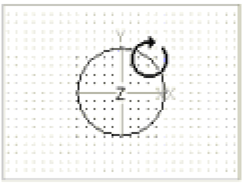
Dragging the track.



Rotating left to right around the Y axis.



Rotating forward or backward around the X axis.



Rotating around the Z axis.

6. Use the buttons at the top of the dialog to allow or prevent movement or scaling.

   For more information, see [Changing editing options](#)

   > **TIP** Right-click the workspace to display a shortcut menu that displays commands to restore, center, or flip the selection box. You can also force the box to match the source media's aspect ratio or your project's output aspect ratio. Matching the output aspect ratio can prevent black bars from appearing when you use source media (such as photographs) that does not match your project's aspect ratio.

7. The 3D track motion occurs instantly, and the results are updated in the Video Preview window.
8. Use the keyframe controller at the bottom of the Track Motion window to establish distinct motion settings throughout the duration of the tracks.
9. During playback, intermediate frames are interpolated to create smooth motion.

Expand the KEYFRAME INTERPOLATION heading on the left side of the window and drag the SMOOTHNESS slider to adjust the interpolation. For more information about keyframe animation,see Keyframe animation

Changing editing options

Use the toolbar at the top of the Track Motion window to change your editing options:

Item	Description
Enable Rotation	Select this button if you want to be able to rotate, or spin, the video. When the button is not selected, video is locked so you can move it along the X, Y, or Z axis, but the track cannot be rotated.
Enable Snapping to Grid	Select this button if you want your editing to snap to the grid.
Edit in Object Space	Select this button if you want to edit in the object's space rather than the camera's space. For example, if a track is rotated, its X axis may not correspond to the X axis of the of the Video Preview window. Selecting the EDIT IN OBJECT SPACE button in conjunction with the PREVENT MOVEMENT buttons allows you to move the object along its own X, Y, and Z axes.
Prevent Movement (X)	Select this button if you want to prevent horizontal movement of the track.
Prevent Movement (Y)	Select this button if you want to prevent vertical movement of the track.
Prevent Movement (Z)	Select this button if you want to prevent movement of the track along the Z axis (closer to or farther from the viewer).
Lock Aspect Ratio	Select this button if you want the selection box to retain its aspect ratio during resizing. When the button is not selected, the height and width can be resized independently.

Item	Description
Scale About Center	Select this button if you want the selection box to retain its center point when you resize the box by dragging its edges. When the button is not selected, the opposite side of the selection box will remain anchored when you drag the edges to resize it.
Prevent Scaling (X)	Select this button if you want to lock the horizontal dimension of the selection box.
Prevent Scaling (Y)	Select this button if you want to lock the vertical dimension of the selection box.
Prevent Scaling (Z)	Select this button if you want to lock the Z-axis dimension of the selection box.

Saving or recalling a keyframe preset

Keyframe presets save the settings of the selected keyframe row at the cursor position.

> **NOTE** Presets for 2D and 3D track motion are saved separately: presets you create in this window will not be available in the 2D Track Motion window.

Saving a preset

1. Adjust your Position settings as desired to create a keyframe.
2. Type a name in the PRESET box.
3. Click the SAVE PRESET button.

Recalling a preset

1. Click in the keyframe controller to position the cursor where you want to apply the preset.

2. Choose a setting from the PRESET drop-down list.

   If no keyframe exists at the cursor position, one is created using the settings from the preset. If a keyframe exists at the cursor position, the keyframe's settings are replaced with the settings from the preset.

Deleting a preset

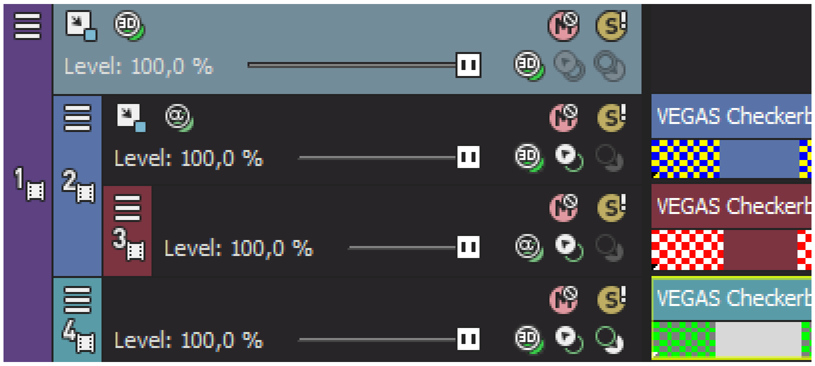
Click the DELETE PRESET button ✕ to delete the current preset.

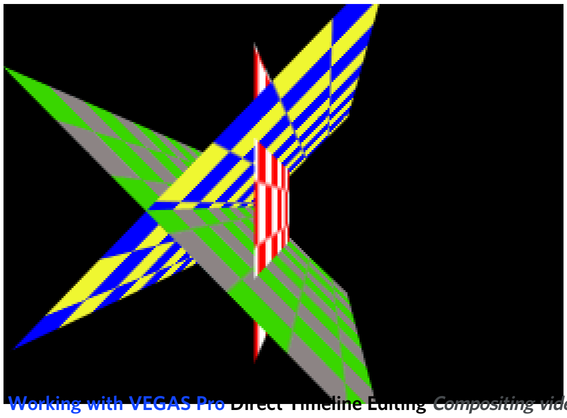
Examples of various 3D compositing scenarios

In the following examples, track two (blue-and-yellow checkerboard) is rotated forward in 3D space, track 4 (green-and-gray checkerboard) is rotated backward in 3D space, and track 3 (red-and-white checkerboard) is a 2D track.

Track 1 is used to rotate tracks 2 through 4 so you can see the compositing interaction.

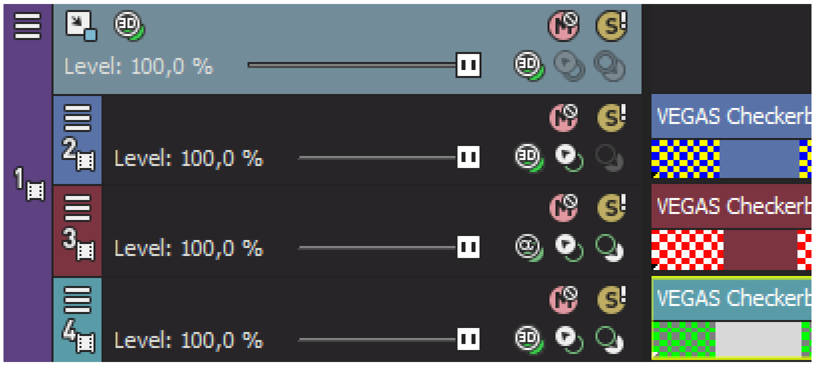
In the first example, the 2D track is a compositing child to track 2. The 2d child is inserted in the composited output at a depth of zero on the Z axis, and tracks 2 and 4 intersect in 3D space.

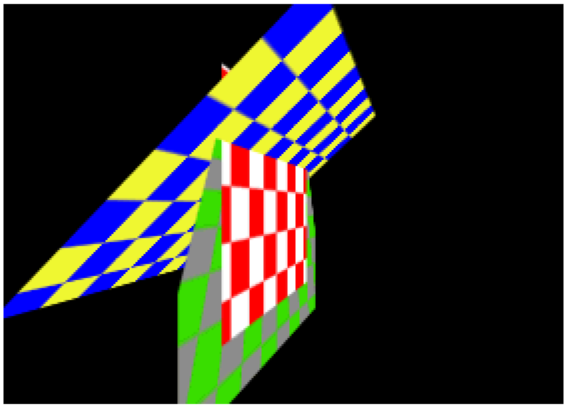




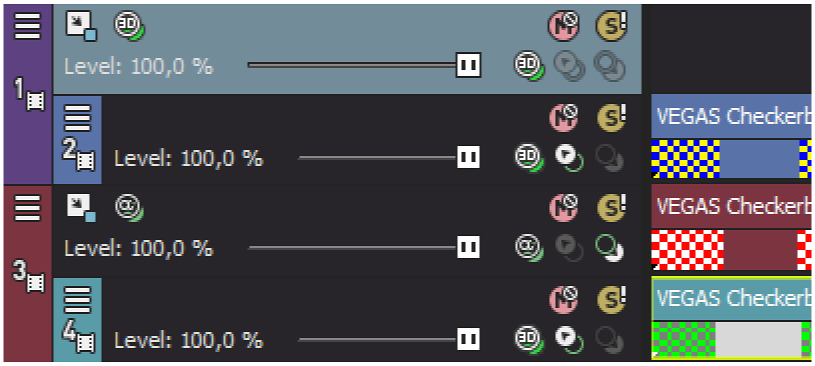
In the next example, clicking the MAKE COMPOSITING PARENT button on track 3 forces the track below (at the same compositing level) to be rendered in 3D and composited as a 2D image.

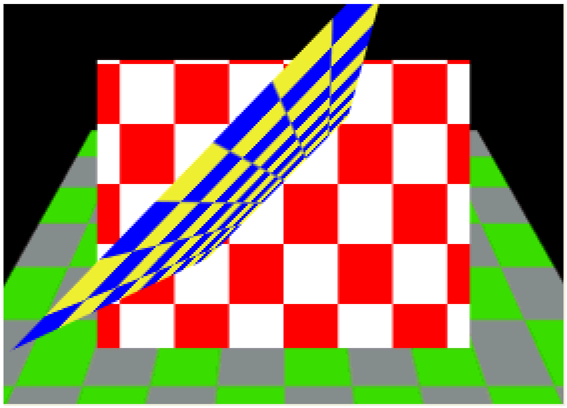
Track 4 (green-and-gray checkerboard) now has the appearance of depth—the checkerboard tapers to a vanishing point—but is inserted in the composited output as a 2D image at a depth of zero on the Z axis. Track 2 is still rotated in 3D space.


1
Level: 100,0 %
2
Level: 100,0 %
VEGAS Checkerb
3
Level: 100,0 %
VEGAS Checkerb
4
Level: 100,0 %
VEGAS Checkerb

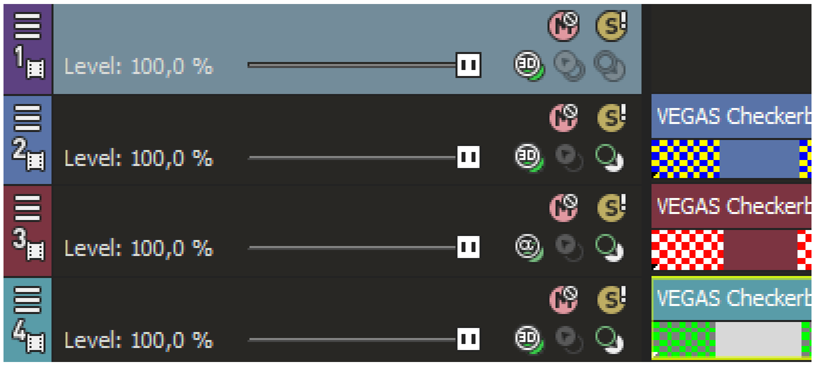


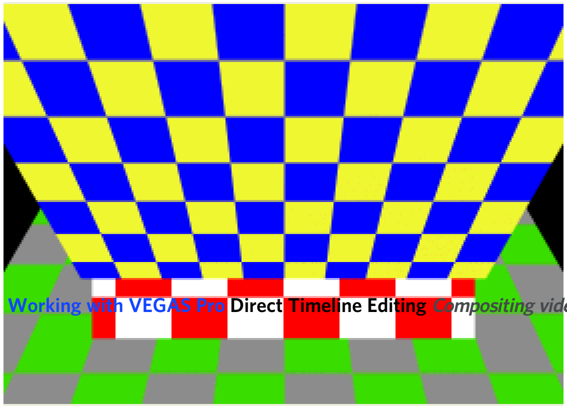
In the next example, clicking the MAKE COMPOSITING PARENT button on track 3 again forces the track below (at the same compositing level) to be rendered in 3D and composited as a 2D image. However, in this case, the 3D rotation that was applied as parent motion on track 1 is not applied to tracks 3 and 4.


1
Level: 100,0 %
2
Level: 100,0 %
VEGAS Checkerb
3
Level: 100,0 %
VEGAS Checkerb
4
Level: 100,0 %
VEGAS Checkerb



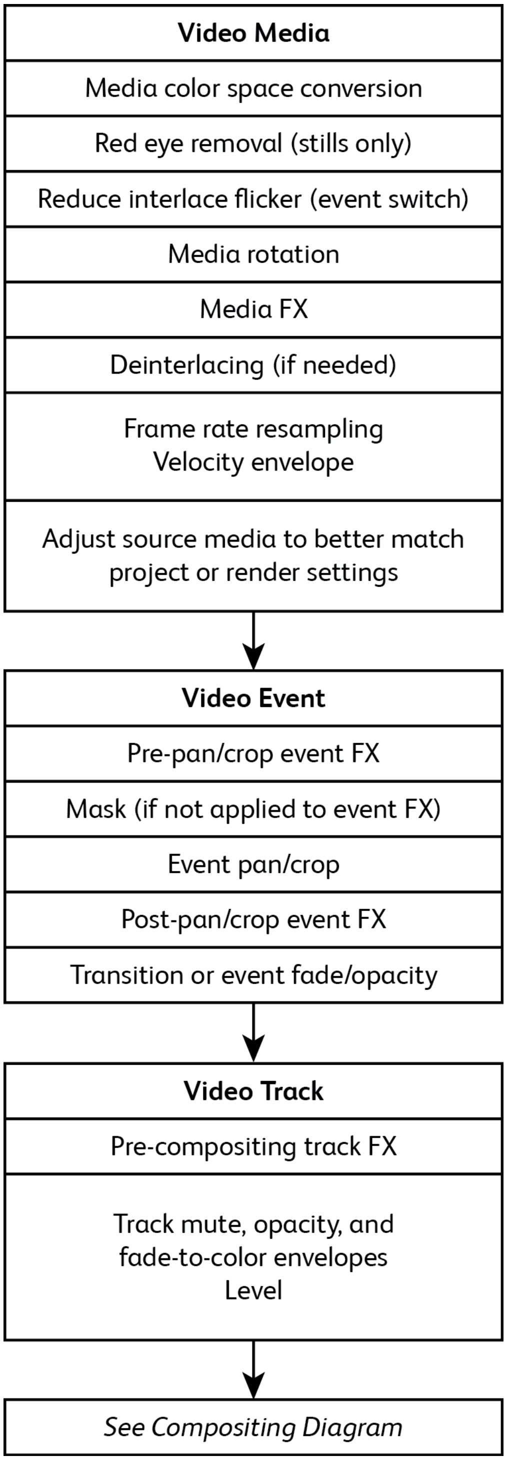
In the next example, all tracks are compositing parents. The 3D track on track 2 is on top, the 2D track in track 3 is composited below track 2, and the 3D track in track 4 is composited below tracks 3 and 4.


1
Level: 100,0 %
2
Level: 100,0 %
VEGAS Checkerb
3
Level: 100,0 %
VEGAS Checkerb
4
Level: 100,0 %
VEGAS Checkerb



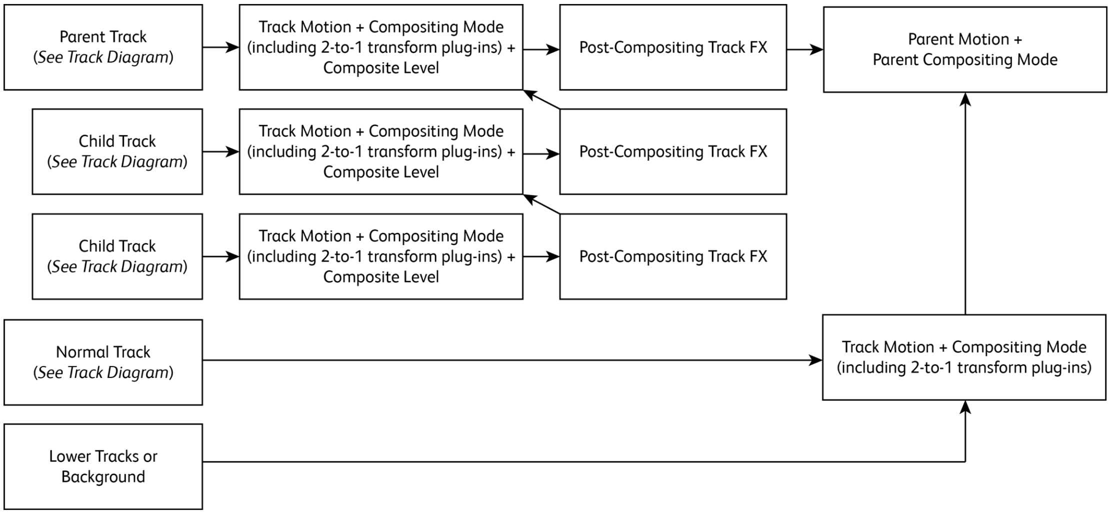
Video signal flow diagram

Signal flow for tracks


Video Media
Media color space conversion
Red eye removal (stills only)
Reduce interlace flicker (event switch)
Media rotation
Media FX
Deinterlacing (if needed)
Frame rate resampling
Velocity envelope
Adjust source media to better match project or render settings
Video Event
Pre-pan/crop event FX
Mask (if not applied to event FX)
Event pan/crop
Post-pan/crop event FX
Transition or event fade/opacity
Video Track
Pre-compositing track FX
Track mute, opacity, and fade-to-color envelopes
Level
See Compositing Diagram

Compositing signal flow

The following diagram refers to 2D compositing only.


Parent Track
(See Track Diagram)
Track Motion + Compositing Mode (including 2-to-1 transform plug-ins) + Composite Level
Post-Compositing Track FX
Parent Motion + Parent Compositing Mode
Child Track
(See Track Diagram)
Track Motion + Compositing Mode (including 2-to-1 transform plug-ins) + Composite Level
Post-Compositing Track FX
Child Track
(See Track Diagram)
Track Motion + Compositing Mode (including 2-to-1 transform plug-ins) + Composite Level
Post-Compositing Track FX
Normal Track
(See Track Diagram)
Track Motion + Compositing Mode (including 2-to-1 transform plug-ins)
Lower Tracks or Background

Color Grading

Color grading is the process of adjusting the colors, contrast, and overall tone of your video to achieve a consistent look, correct color imbalances, or create a specific mood. It is an essential step for matching shots, guiding the viewer’s attention, and giving your project a polished, professional finish.

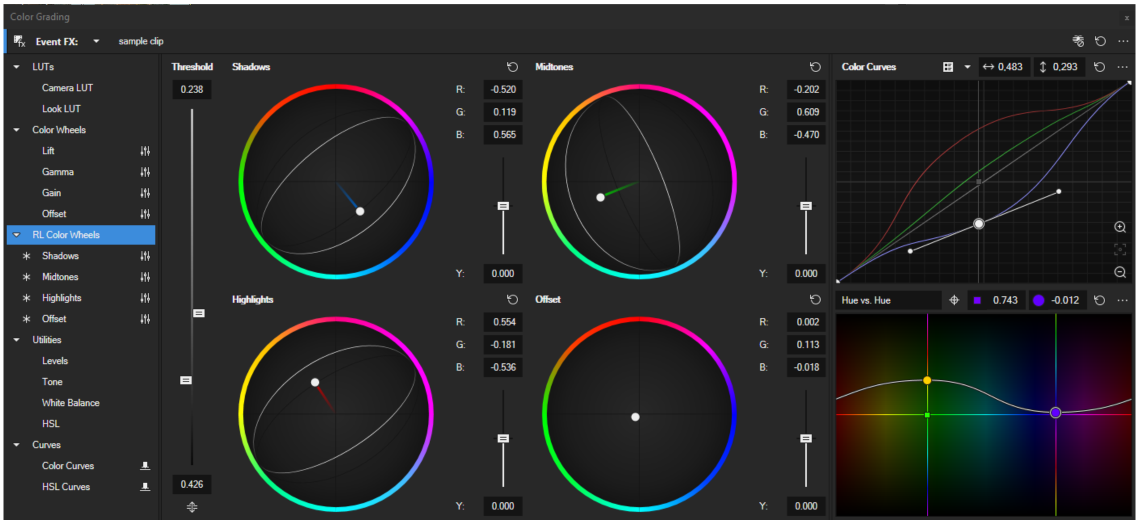

Color Grading
Event FX:
sample clip
LUTs
Camera LUT
Look LUT
Color Wheels
Lift
Gamma
Gain
Offset
RL Color Wheels
Shadows
Midtones
Highlights
Offset
Utilities
Levels
Tone
White Balance
HSL
Curves
Color Curves
HSL Curves
Threshold
0.238
0.426
Shadows
R: -0.520
G: 0.119
B: 0.565
Y: 0.000
Midtones
R: -0.202
G: 0.609
B: -0.470
Y: 0.000
Highlights
R: 0.554
G: -0.181
B: -0.536
Y: 0.000
Offset
R: 0.002
G: 0.113
B: -0.018
Y: 0.000
Color Curves
↔ 0,483
↕ 0,293
Hue vs. Hue
0.743
-0.012

FIGURE *COLOR GRADINGwindow*

The COLOR GRADING window provides all the tools you need for precise color work, including color wheels, LUT support, and curve adjustments. It works with any type of video, including HDR, and can be applied at different FX levels to suit your workflow.

USE CASES

- Match the color tone of clips shot on different cameras so that the entire sequence looks consistent.
- Create a warm, cinematic look for a sunset scene to enhance its mood and emotional impact.
- Correct an underexposed interview shot by brightening the midtones and restoring natural skin tones.

Open the Color Grading Window

You can open the Color Grading window in several ways:

- Menu: VIEW | WINDOW | COLOR GRADING
- The Transport and Editing Toolbar: COLOR GRADING button

- Shortcut: Alt+G

NOTE In the default layout, the Color Grading window is already shown in the Window Docking Area.

TIP The window is dockable, so you can place it anywhere in your layout or undock it to float on its own monitor. The layout is responsive, adapting to the available space.

Navigate the Color Grading Window

The Color Grading window uses the familiar docking system found throughout VEGAS Pro. You can dock it in any position within your workspace or undock it to float on a separate monitor. Its layout is responsive, adapting automatically to the available space.

Sections Overview

Use the navigation list on the left to switch sections. Click the **Expand** arrow to reveal sub controls such as individual wheels or curve types.

Section	Description
LUTs	Apply Camera LUTs for input color space conversion and Look LUTs for creative styles. LUTs
Color Wheels	Adjust the overall color balance using offset, gamma, and gain controls. Color Wheels and RL Color Wheels
RL Color Wheels	Range-limited wheels that target shadows, midtones, highlights, and Offset within thresholds. Color Wheels and RL Color Wheels
Utilities	Adjust Levels, Tone, White Balance, and HSL. Utilities
Curves	Fine tune with RGB or luminance and HSL curves. Pin curves to keep them visible while using other tools. Color Curves

Resizing and Repositioning

Like any dockable window in VEGAS Pro, you can:

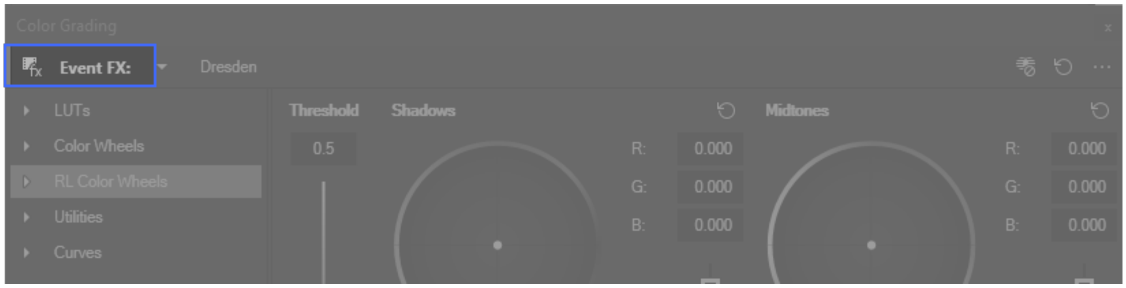
- Drag the edges to resize it within the docking area.
- Undock it by dragging the tab away from its dock and positioning it anywhere on your screen.
- Re-dock it by dragging it back into the docking area until a highlight indicates the drop location.

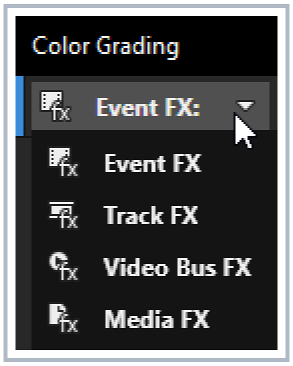
TIP
For a dedicated grading monitor, undock the Color Grading window and move it to a second screen for more working space.

Working at a Specific FX Level

Each FX level has its own control to open the Color Grading window and set it to work at that level. Any changes you make will be applied to the selected event.

A label at the top left of the window shows the current FX level and the active take name for the selected event.


Color Grading
Event FX:
Dresden
LUTs
Color Wheels
RL Color Wheels
Utilities
Curves
Threshold
0.5
Shadows
R: 0.000
G: 0.000
B: 0.000
Midtones
R: 0.000
G: 0.000
B: 0.000


Color Grading
Event FX:
Event FX
Track FX
Video Bus FX
Media FX

FX level	How to select it
Event level Default option. Applies grading to selected events.	Click an event's MORE ⋯ button and choose COLOR GRADING.
Track level Applies grading to the selected track.	Click the track's MORE ⋯ button and choose COLOR GRADING. The focus switches to the track level or opens the window if it is not visible.
Media level Applies grading to the selected clip in the Project Media window.	Open PROJECT MEDIA. Right click the media thumbnail and choose COLOR GRADING.
Video Output Bus level Applies grading to all project video output.	Right click the VIDEO PREVIEW window and choose VIDEO OUTPUT COLOR GRADING.
From within the Color Grading window	Click the ADD TO FX LEVEL drop down in the button bar and choose the desired level.

Panel toolbar (global controls)

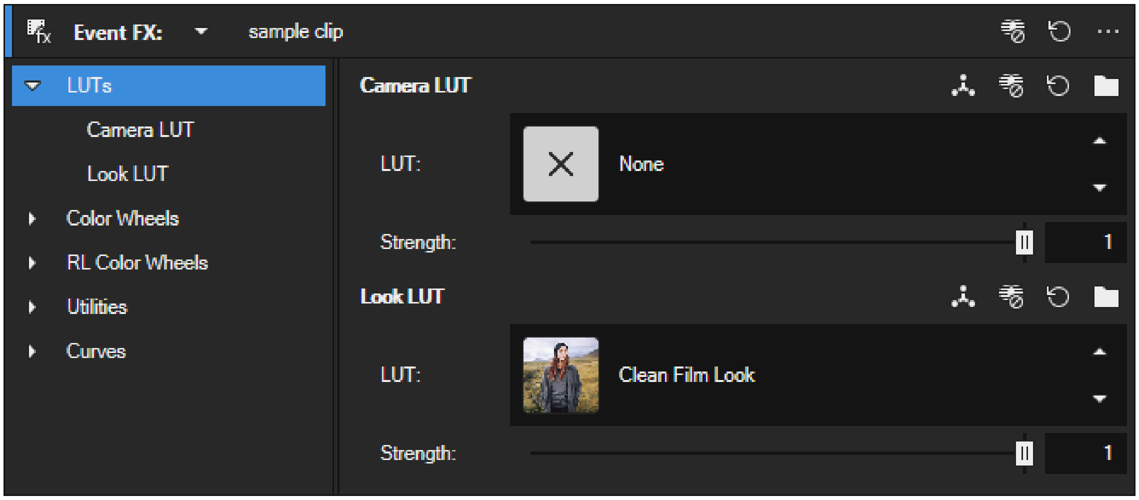
These controls are available at the top of the Color Grading window in every section.

Button	Purpose	Typical use
BYPASS COLOR GRADING	Temporarily disables all processing from the Color Grading panel at the current FX level. The video passes through unchanged while other effects in the chain remain active.	Quick A/B check to judge your grade or to verify a neutral baseline.
↺ RESET ALL	Restores all Color Grading controls to their defaults at the current FX level. It clears adjustments across all sections such as Wheels, Curves, Utilities, and LUTs.	Start over from a clean state after experimenting or before applying a preset workflow.
⋯ MORE MENU	BÉZIER MASK: add a Bézier Mask effect to combine area-limited adjustments with your grade. BROADCAST COLORS: add a filter to keep luma and chroma within broadcast-safe ranges. EXPORT LUT: export your current grade as a LUT file for reuse.	Insert companion effects from one place and export your grade for other shots or projects.

> **NOTE** When you export a LUT, only the grading at the currently selected FX level is included in the LUT.

LUTs

Use LUTS to transform color values consistently. A CAMERA LUT (Input LUT) interprets footage from a specific capture format such as log. A LOOK LUT adds a creative style. You can use them together: first normalize with a Camera LUT, then blend in a Look LUT.


Event FX:
sample clip
LUTs
Camera LUT
Look LUT
Color Wheels
RL Color Wheels
Utilities
Curves
Camera LUT
Look LUT

Camera LUT

LUT: None

Strength: 1

Look LUT

LUT: Clean Film Look

Strength: 1

FIGURE *LUTs panel with Camera LUT and Look LUT*

USE CASES

- Normalize log footage

  Select a CAMERA LUT preset such as APPLE LOG TO REC.709 or SAMSUNG LOG TO LINEAR from the grid. Enable TETRAHEDRAL INTERPOLATION for the most faithful decoding and set STRENGTH to 1 unless you intentionally mix with the untreated signal.

- Audition creative looks

  Open the LOOK LUT list and browse the thumbnail grid. Use LUT SELECTION to toggle the highlighted look on and off while you compare, then set STRENGTH around 0.2 to 0.4 for a subtle grade.

- Load a vendor LUT

  Click BROWSE to load a LUT supplied by the camera manufacturer or a grading package. After loading, adjust STRENGTH to blend and click RESET to remove it if it does not fit your workflow.

Apply a Camera LUT

1. Open the Color Grading Window and select LUTS.
2. In CAMERA LUT, open the LUT list and pick a preset. Use BROWSE to load a custom file if needed.
3. Adjust STRENGTH to blend the transform with the original image.
4. Optional: enable TETRAHEDRAL INTERPOLATION for higher accuracy, or click RESET to remove the current Camera LUT.

Apply a Look LUT

1. In LOOK LUT, open the LUT list and choose a look preset.
2. Set STRENGTH for a subtle or strong effect. Use LUT SELECTION to quickly apply or remove the chosen look while browsing.
3. Optional: enable TETRAHEDRAL INTERPOLATION for best precision or click RESET to clear the loaded look.

LUT controls

Control	Purpose	Typical use
LUT list	Selects a preset or shows NONE. The list includes technical Camera LUTs and creative Look LUTs. Use BROWSE to load a file from disk when you need a LUT that is not in the list.	Pick a matching log decoding LUT or a creative look preset.
STRENGTH	Blends the LUT output with the original. At 0 the LUT is bypassed; at 1 it is fully applied. Use small trims to keep skin tones and highlights natural.	Dial in a subtle look or reduce a strong technical transform.
TETRAHEDRAL INTERPOLATION	Uses tetrahedral interpolation for color lookups. This method yields smoother gradients and more accurate color mapping, especially with coarse or high-contrast LUTs. It may be a bit more demanding than simple linear interpolation.	Enable when critical color fidelity is required.
LUT SELECTION	Toggles applying or removing the selected look while you preview options. This helps compare alternatives without changing other settings.	Quickly A/B a look during browsing.
RESET	Removes the currently loaded LUT in that row. The slot returns to NONE. Other settings in the panel remain unchanged.	Clear a test LUT and return to the unprocessed image.
BROWSE	Opens a file dialog to locate a LUT on disk. Supports standard 3D LUT files in `.cube` format.	Load a camera vendor LUT (`.cube`) or a show look from your library.

Mobile log formats (Apple and Samsung)

Recent mobile devices can record log video that benefits from an appropriate Camera LUT. The CAMERA LUT list includes presets for Apple and Samsung log formats in two variants: LOG TO LINEAR and LOG TO REC.709.

- **Log to Linear**: decodes log into linear values for the most accurate base. Choose this for compositing and careful grading where precision matters.
- **Log to REC.709**: converts directly to the REC.709 display space. Choose this for edit-friendly performance and when your delivery target is REC.709.

If you are unsure, start with LOG TO REC.709 for a fast, good looking baseline and switch to LOG TO LINEAR when a more technical workflow requires it.

Color Wheels and RL Color Wheels

Color Wheels are tools for adjusting the tonal balance and color characteristics of your footage. You can choose between Color Wheels for broad adjustments and Range-Limited (RL) Color Wheels for precise corrections in specific brightness ranges. Both share many controls and workflows, making it easy to switch between them without losing your work.

> **USE CASES**
>
> - Color Wheels: Apply global tonal and color changes to the entire image.
> - RL Color Wheels: Target shadows, midtones or highlights for precise adjustments.
> - Combined use: Balance the image with Color Wheels, then fine-tune details with RL Color Wheels.

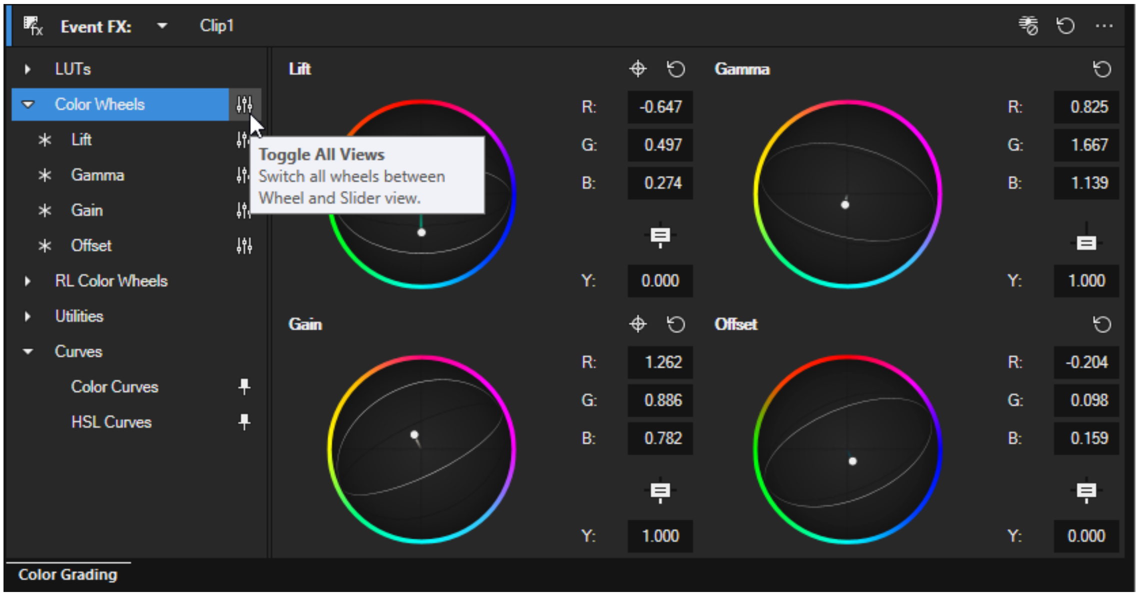
» Open the Color Grading Window and select COLOR WHEELS or RL COLOR WHEELS in the left navigation.

Switching Between Views

In the COLOR WHEELS and RL COLOR WHEELS sections, you can choose between **wheel view** and **slider view**:

1. Hover over the section heading.
2. Click the TOGGLE ALL VIEWS button to switch all controls in that category between wheels and sliders.

> **NOTE** Switching affects only how the controls are displayed. It does not change the actual grading settings.

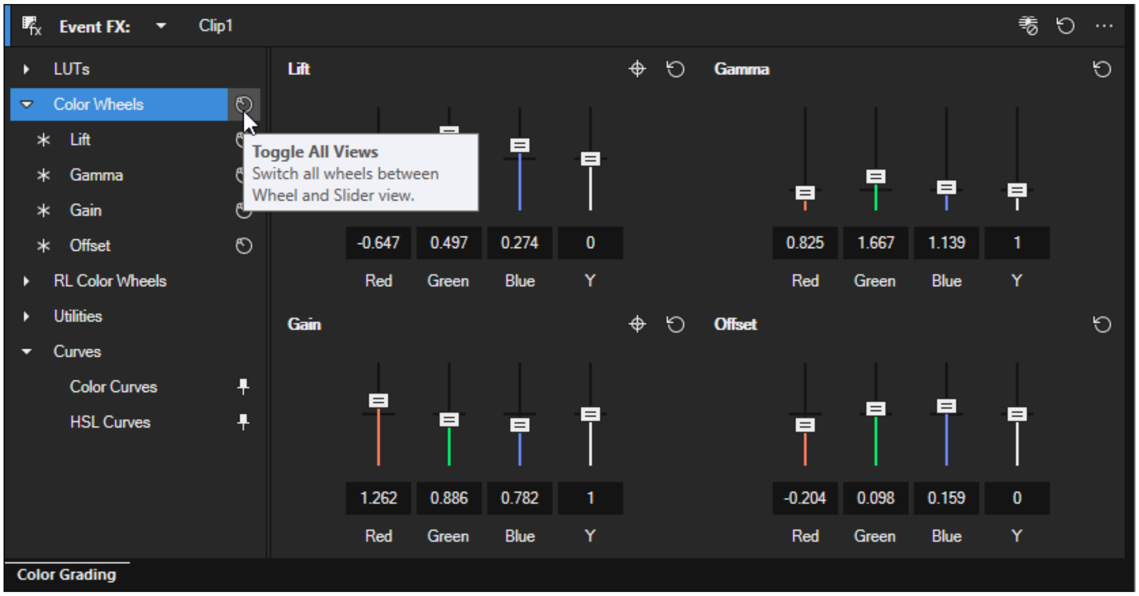

Event FX:
Clip1
LUTs
Color Wheels
Lift
Gamma
Gain
Offset
RL Color Wheels
Utilities
Curves
Color Curves
HSL Curves
Color Grading
Lift
Gamma
Gain
Offset

Toggle All Views
Switch all wheels between Wheel and Slider view.

Lift: R: -0.647 G: 0.497 B: 0.274 Y: 0.000
Gamma: R: 0.825 G: 1.667 B: 1.139 Y: 1.000
Gain: R: 1.262 G: 0.886 B: 0.782 Y: 1.000
Offset: R: -0.204 G: 0.098 B: 0.159 Y: 0.000

FIGURE *Wheel view*

Show and


Event FX:
Clip1
LUTs
Color Wheels
Lift
Gamma
Gain
Offset
RL Color Wheels
Utilities
Curves
Color Curves
HSL Curves
Color Grading
Lift
Gamma
Gain
Offset
-0.647
0.497
0.274
0
0.825
1.667
1.139
1
1.262
0.886
0.782
1
-0.204
0.098
0.159
0
Red
Green
Blue
Y

Toggle All Views
Switch all wheels between Wheel and Slider view.

FIGURE *Slider view*

Focus Individual Wheels

1. Select COLOR WHEELS or RL COLOR WHEELS in the navigation.
2. Click the EXPAND arrow to show all wheels.
3. Click a wheel to work on it exclusively.

Adjust Wheels and Sliders

- Select a wheel.
- Drag the wheel handle for broad adjustments.
- Drag inside the wheel for fine control.
- Hold `Ctrl` while dragging for high precision.

In slider view:

- R/G/B sliders adjust hue and saturation within the active range.
- The Y slider adjusts luminance only and leaves hue unchanged.

Keyboard Precision

- Click inside a wheel to focus it.
- Use the arrow keys to move the control point.
- Hold Shift with arrow keys to adjust hue or saturation independently.
- Hold Ctrl with arrow keys for micro-adjustments.
- Press two arrow keys at the same time for diagonal movement.

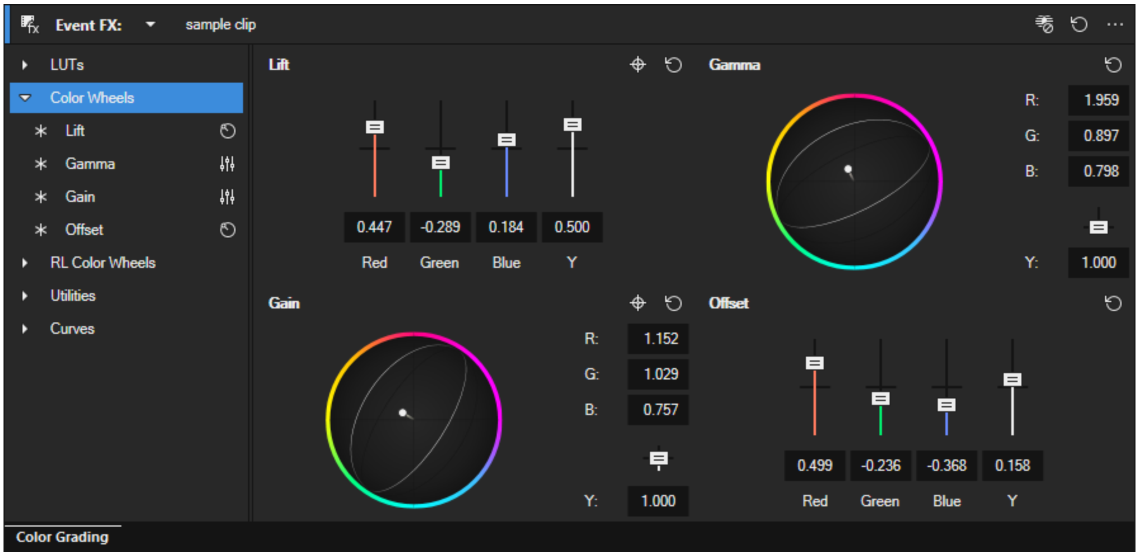
> **TIP**
> Double-click a control to reset it to its default value.

FURTHER INFORMATION

- Color Wheels
- RL Color Wheels

Color Wheels

Color Wheels let you adjust four tonal regions of your image: Lift, Gamma, Gain and Offset. They are best suited for overall color balancing before fine-tuning with RL Color Wheels.


Event FX:
sample clip
LUTs
Color Wheels
Lift
Gamma
Gain
Offset
RL Color Wheels
Utilities
Curves
Color Grading

Lift

Red	Green	Blue	Y
0.447	-0.289	0.184	0.500

Gamma

R: 1.959
G: 0.897
B: 0.798
Y: 1.000

Gain

R: 1.152
G: 1.029
B: 0.757
Y: 1.000

Offset

Red	Green	Blue	Y
0.499	-0.236	-0.368	0.158

EXAMPLE

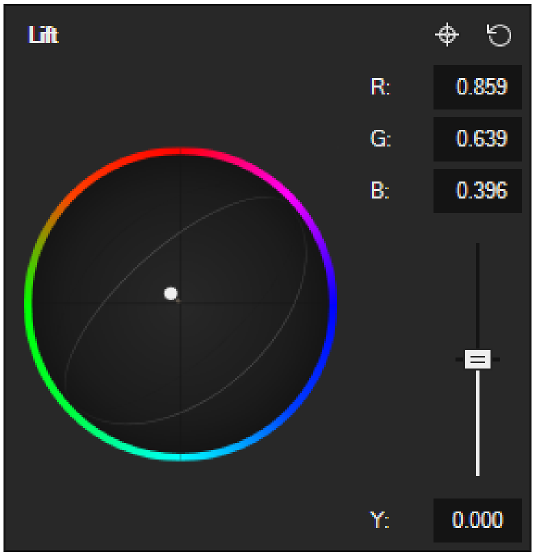
1. Use LIFT to deepen shadows while keeping detail.
2. Use GAMMA to correct a green midtone cast.
3. Use GAIN to keep highlights crisp without clipping.

Tonal ranges in Color Wheels

Control	Affects	Purpose
LIFT	Shadows (darkest areas)	Sets the black foundation of the image. Deepen or raise shadow detail without pushing midtones. Useful to control noise in dark regions and establish the contrast floor.
GAMMA	Midtones	Refines the body of the image where most detail and skin tones live. Ideal for balancing overall lightness and color without crushing blacks or blowing highlights.
GAIN	Highlights (brightest areas)	Controls bright regions and specular detail. Use to add sparkle or to soften peaks while preserving texture and avoiding clipping.
OFFSET	Entire tonal range	Applies a uniform shift to the whole image. Useful for global white-balance tweaks or quick exposure matching across shots.

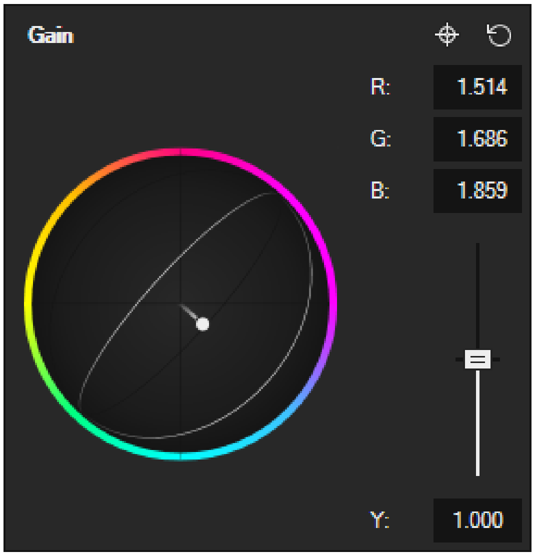
Specify White and Black Points

Quickly set reference points for true black and true white to establish a balanced starting point.



R: 0.859
G: 0.639
B: 0.396
Y: 0.000

FIGURE *Specify black point (Lift)*



R: 1.514
G: 1.686
B: 1.859
Y: 1.000

FIGURE *Specify white point (Gain)*

1. Open COLOR GRADING → COLOR WHEELS.
2. To set the **black point** on LIFT: click SPECIFY A BLACK POINT ⌖ and then click a black area in the VIDEO PREVIEW.
3. To set the **white point** on GAIN: click SPECIFY A WHITE POINT ⌖ and then click a white reference in the VIDEO PREVIEW.

Preview Selected Colors

1. Click either SPECIFY A BLACK POINT or SPECIFY A WHITE POINT.
2. **Hover** over the VIDEO PREVIEW to see the pixel's color without clicking.

   The color swatch and **R/G/B** readouts in the panel update as you move the mouse.

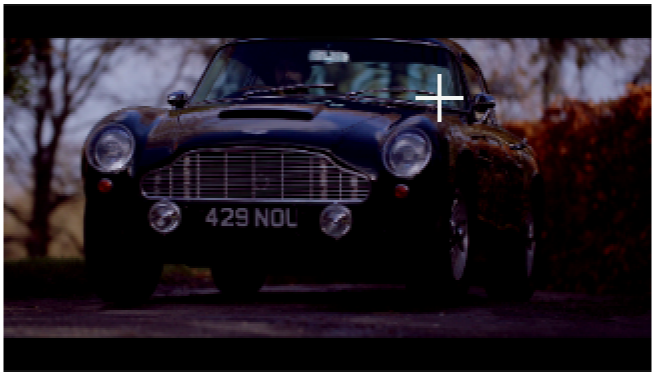
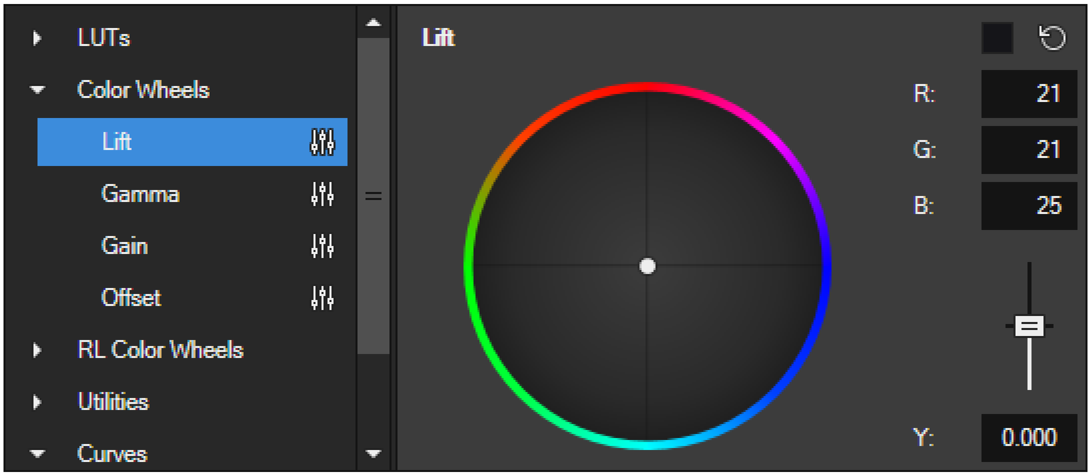


FIGURE Hover to preview a pixel's color.


LUTs
Color Wheels
Lift
Gamma
Gain
Offset
RL Color Wheels
Utilities
Curves
Lift

R: 21

G: 21

B: 25

Y: 0.000

FIGURE Live R/G/B readouts in the Color Grading window.

Select a Region

Average a region to reduce noise or single-pixel outliers when setting black or white points.

1. Activate a picker tool.
2. Drag a rectangle over the area you want to average.

   VEGAS averages the sampled area and uses the result for the selected picker.

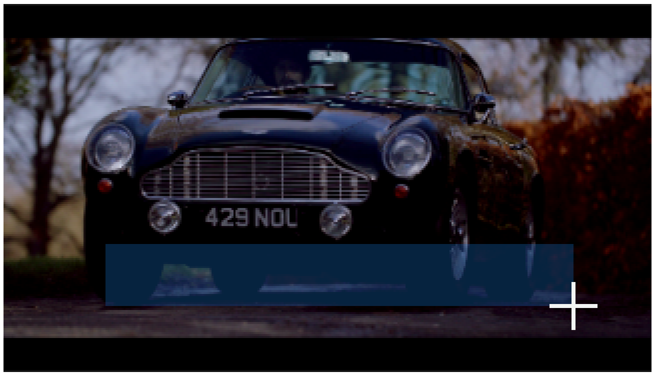
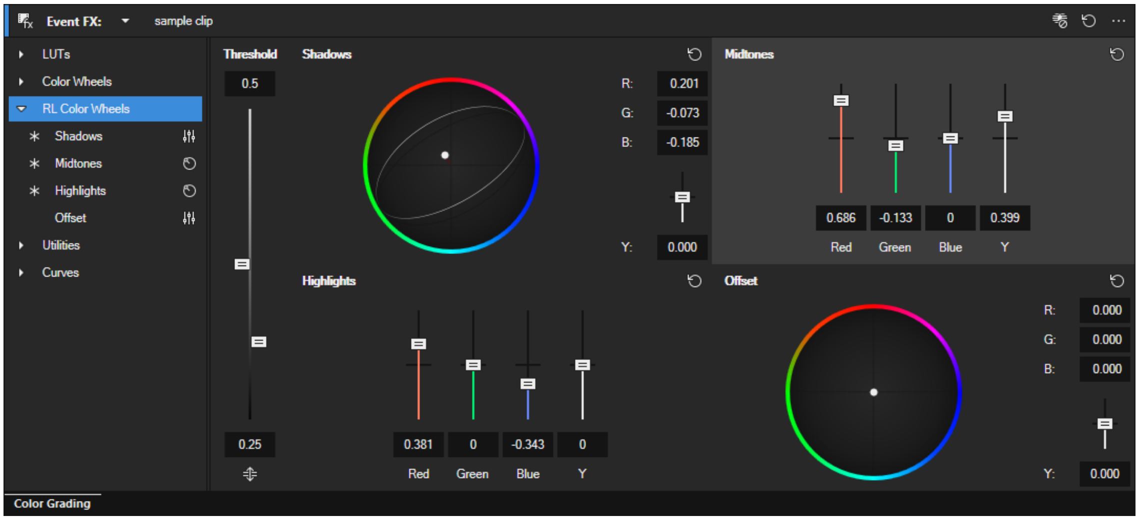


FIGURE *Select a region for color averaging*

RL Color Wheels

Range-Limited (RL) Color Wheels let you target specific luminance ranges including Shadows, Midtones, Highlights and Offset, using threshold controls for precise color grading.


Event FX:
LUTs
Color Wheels
RL Color Wheels
Shadows
Midtones
Highlights
Offset
Utilities
Curves
Color Grading

Event FX: sample clip

Threshold: 0.5, 0.25

Shadows: R: 0.201 G: -0.073 B: -0.185 Y: 0.000

Midtones: Red 0.686 Green -0.133 Blue 0 Y 0.399

Highlights: Red 0.381 Green 0 Blue -0.343 Y 0

Offset: R: 0.000 G: 0.000 B: 0.000 Y: 0.000

FIGURE *RL Color Wheels with threshold overlays*

EXAMPLE

1. Enable SHOW LIMITS ON SCOPES.
2. Use SHADOWS to remove a green cast while thresholds protect midtones.
3. Use the Y slider to lift only the shadow luma.

Tonal ranges in RL Color Wheels

RL wheel	Range focus	Purpose
SHADOWS	Primarily below the lower THRESHOLD	Targets dark regions defined by the lower boundary. Use to neutralize color casts in blacks or to lift detail gently without affecting midtones.
MIDTONES	Between lower and upper THRESHOLD	Works on the core of the image. Balance skin tones and general scene lightness while thresholds keep blacks and highlights protected.
HIGHLIGHTS	Primarily above the upper THRESHOLD	Affects bright areas such as skies and speculars. Use to remove a color cast or to recover headroom while keeping midtones intact.
OFFSET	Global with roll-off at thresholds	Applies a uniform shift across the image while the lower and upper thresholds shape where the effect tapers. Useful for a gentle overall bias after setting the range.

Adjust RL Color Wheels

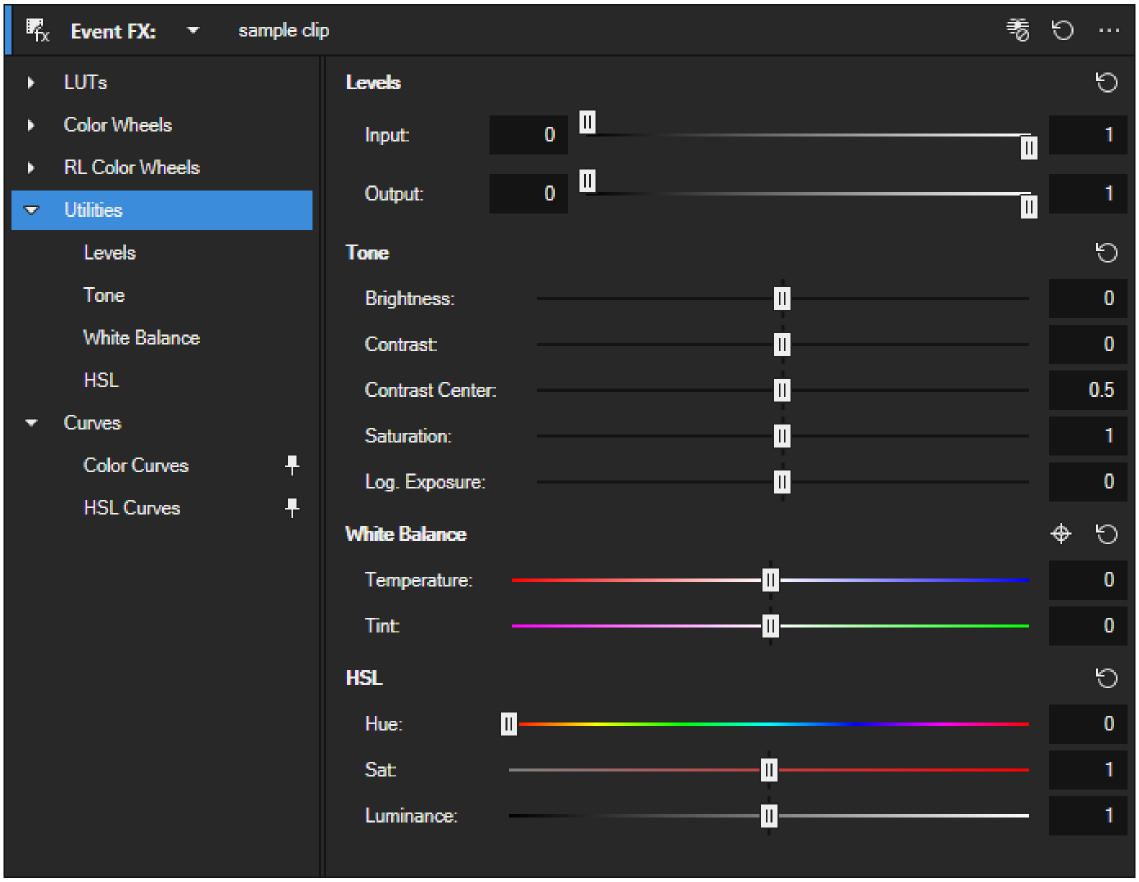
1. Open RL COLOR WHEELS.
2. Set thresholds by dragging the lower and upper handles or entering values.
3. Activate SHOW LIMITS ON SCOPES to visualize the affected range.
4. Adjust hue and saturation with the wheel or RGB sliders.
5. Adjust luminance with the Y slider.
6. Fine-tune until the image and scopes match your target look.

RL Controls

Control	Purpose
THRESHOLD (lower / upper)	Sets the lower and upper luminance thresholds that define the RL working range. Drag the two handles or enter values; use SHOW LIMITS ON SCOPES to place the boundaries precisely.
SHOW LIMITS ON SCOPES	Displays both boundaries as guides on the scopes. This makes it easier to align thresholds with real image content.

Utilities

UTILITIES provide quick controls for levels, tone, white balance, and global HSL adjustments. Use them early to set a clean baseline before creative grading and shot matching. Make small changes and watch scopes to maintain detail and avoid clipping.


Event FX:
sample clip
LUTs
Color Wheels
RL Color Wheels
Utilities
Levels
Tone
White Balance
HSL
Curves
Color Curves
HSL Curves

Levels

Input: 0 1

Output: 0 1

Tone

Brightness: 0

Contrast: 0

Contrast Center: 0.5

Saturation: 1

Log. Exposure: 0

White Balance

Temperature: 0

Tint: 0

HSL

Hue: 0

Sat: 1

Luminance: 1

FIGURE *Utilities overview*

USE CASES

- Quick baseline

  Normalize exposure with BRIGHTNESS, then set black and white points using INPUT/OUTPUT. Add a subtle tweak with SATURATION to restore overall intensity.

- Match two shots

  Neutralize a cast using TEMPERATURE and TINT, then pivot contrast with CONTRAST CENTER to protect midtones (e.g., skin). If needed, fine tune LUMINANCE in HSL to align perceived brightness.

- Delivery-safe baseline

  Limit peaks and lift the floor with OUTPUT to meet delivery constraints. Apply a small LOG. EXPOSURE trim to stabilize log footage before creative grading.

Levels

Use LEVELS to set the black and white points of the image and to limit the darkest and brightest output values.

Control	Purpose	Typical use
INPUT	Defines the black and white points that are mapped into the available output range. Moving the black point sets where shadows begin to clip, while the white point sets the highlight clipping threshold. Together they can expand a low-contrast image or protect detail at the ends of the tonal scale.	Recover separation in a flat clip or avoid crushing/clipping in extremes.
OUTPUT	Sets minimum and maximum output levels after remapping. Raising the black output prevents absolute black and creates a softer floor; lowering the white output keeps peaks below delivery ceilings. Use it to meet broadcast/encoding limits or to create a matte, restrained look.	Keep highlights below a ceiling or lift the black floor deliberately.

1. Open UTILITIES → LEVELS.
2. Adjust INPUT to set the black and white points.
3. Adjust OUTPUT to limit the darkest and brightest values.
4. Double click a slider to reset it.

Tone

TONE provides quick controls for overall brightness, contrast, and saturation. Use CONTRAST CENTER to set the pivot for contrast and LOG. EXPOSURE for exposure trims on log-encoded footage.

Control	Purpose	Typical use
BRIGHTNESS	Raises or lowers overall lightness uniformly across the image. It does not change contrast; shadows, midtones, and highlights move together. Set a neutral exposure baseline before color work.	Normalize footage prior to contrast and color adjustments.
CONTRAST	Increases or decreases the separation between dark and light areas. Higher values add punch but may hide detail in deep shadows or bright highlights; lower values flatten the image for a softer rendering. Pair with CONTRAST CENTER to choose where expansion pivots.	Add impact or soften a harsh image while preserving key detail.
CONTRAST CENTER	Sets the midpoint around which contrast expands or compresses. Lower pivots bias contrast toward shadows; higher pivots bias toward highlights. Use it to protect skin tones or specular areas while still changing overall contrast.	Target the contrast effect to shadow or highlight regions.
SATURATION	Controls overall color intensity uniformly. Raising saturation increases vividness but can reveal noise or push channels toward clipping; lowering moves the image toward monochrome. Make small changes and watch scopes for channel limits.	Boost muted colors or reduce oversaturation globally.
LOG. EXPOSURE	Adjusts exposure for log-encoded material using a curve suited to log gamma. Small trims here can refine a log-to-linear transform without disturbing color ratios. Apply after technical transforms to fine tune brightness.	Subtle exposure correction on log footage after conversion.

1. Open UTILITIES → TONE.
2. Adjust BRIGHTNESS, CONTRAST, and CONTRAST CENTER to set the tonal balance.
3. Fine tune SATURATION and, if needed, LOG. EXPOSURE.
4. Double click a slider to reset it.

White Balance controls

Use WHITE BALANCE to correct the color temperature and remove green/magenta casts.

Control	Purpose	Typical use
TEMPERATURE	Shifts the white point between warm (red/amber) and cool (blue/cyan). Increasing to the right cools the image; decreasing warms it. Use it to neutralize a daylight or tungsten cast before creative styling.	Correct a warm indoor shot or a cool outdoor scene quickly.
TINT	Balances the green–magenta axis. Move left to add magenta and right to add green. Useful to correct fluorescent/LED shifts that Temperature alone cannot fix.	Remove a green spike from mixed lighting or add magenta to compensate.
SELECT NEUTRAL TONE	Samples a pixel or region assumed to be neutral and sets TEMPERATURE and TINT automatically. The region option averages noisy areas for a more stable result. Verify with scopes and refine sliders if the sample was not truly neutral.	One-click balancing using a white/gray reference in the frame.

1. Open UTILITIES → WHITE BALANCE.
2. Adjust TEMPERATURE and TINT or use SELECT NEUTRAL TONE to auto balance.
3. For a region average, click and drag a rectangle in the VIDEO PREVIEW.

Auto balance using a neutral sample

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1. Click SELECT NEUTRAL TONE ⌖.
2. Point to a neutral area in the VIDEO PREVIEW (white or gray), then either:
   - Click to sample a single pixel, or
   - Click and drag a rectangle to average a region.

VEGAS Pro samples the selection and adjusts TEMPERATURE and TINT automatically.

HSL

Use HSL for quick, global adjustments to hue, saturation, and luminance.

Control	Purpose	Typical use
HUE	Rotates all hues uniformly around the color wheel. It changes overall tint without altering saturation or luminance. Keep adjustments subtle to avoid hue wrap on highly saturated colors.	Shift the global palette slightly warmer or cooler.
SAT	Uniformly increases or decreases color intensity across the image. High values can emphasize noise or push channels toward clipping; low values move toward a muted or monochrome look. Watch scopes to avoid channel limits.	Boost muted colors or tame oversaturated footage.
LUMINANCE	Raises or lowers image brightness with minimal hue shift. The adjustment happens after color so relative color relationships remain stable. Use small trims to match shots after exposure corrections.	Global lightness tweak to align shots.

1. Open UTILITIES → HSL.
2. Adjust HUE, SAT, or LUMINANCE as needed.
3. Double click a slider to reset it.

> **TIP** For selective color changes use HSL Curves.

Color Curves

Color Curves let you fine tune brightness, contrast, and color. Use them to correct tones precisely or to shape a creative look.

» Open the Color Grading Window and select COLOR CURVES in the left navigation.

The Color Grading window provides four curves: one for Brightness and one each for Red, Green, and Blue. In the default view all curves share a single graph, but only the Brightness curve is visible at first.

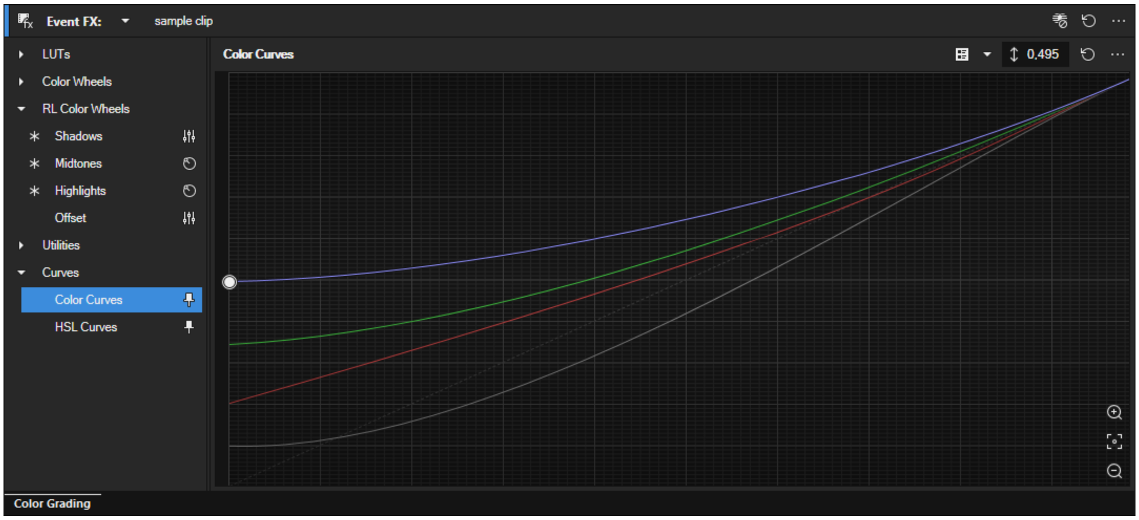

Event FX:
sample clip
LUTs
Color Wheels
RL Color Wheels
Shadows
Midtones
Highlights
Offset
Utilities
Curves
Color Curves
HSL Curves
Color Curves
0.495
Color Grading

FIGURE *Color Curves overview*

Navigation and shortcuts

Zoom the view for precision, pan when zoomed, and reset the viewport with a single key.

- **Zoom in or out**: use the ZOOM buttons or the mouse wheel, or press Num Plus or Num Minus.
- **Reset view**: press Num 5.
- **Pan view**: press Num 8, Num 6, Num 4, or Num 2.
- **Select next or previous point**: press Page Up or Page Down.

These shortcuts help you control curve handles even when they move outside the initial viewport.

Add and edit control points

You can also add additional control points to any curve for even greater control.

- **Add a point**: double click the curve.
- **Edit tangents**: select a point, then press `Shift + Arrow` to move the left tangent, or `Ctrl + Shift + Arrow` to move the right tangent.
- **Unlock tangents**: right click a point and clear LOCK TANGENTS to adjust handles independently.

> **NOTE**
> Control points that are not endpoints have two handles you can use to change the shape of the curve.
>
> By default, the tangents on a point are linked, so moving one handle also moves the other. To adjust handles independently, right click the point and clear LOCK TANGENTS.

Use these controls to shape transitions smoothly without moving the point itself.

Adjust shadows and highlights

- To adjust shadows, drag the control at the left end of the Brightness curve.
- To adjust highlights, drag the control at the right end.
- Use the yellow curve handles on each point to change the curve shape without moving the point.

Each color curve behaves in the same way as the Brightness curve.

Activate additional curves

Click the SELECT CURVES button and enable the checkbox for the curves you want. All activated curves appear on the shared graph.

View all curves at once

- Drag the left border of the COLOR CURVES section to the left.
- Once expanded far enough, the four curves appear side by side, each on its own graph.

This layout can make comparisons clearer when adjusting multiple channels.

> **TIP**
> You can pin CURVES so they remain visible below other sections while you work.

HSL Curves

Use HSL CURVES for selective color changes. The curves remap hue, saturation, or luminance based on the horizontal axis so you can adjust a specific color range without affecting the whole image. For global changes use Utilities.

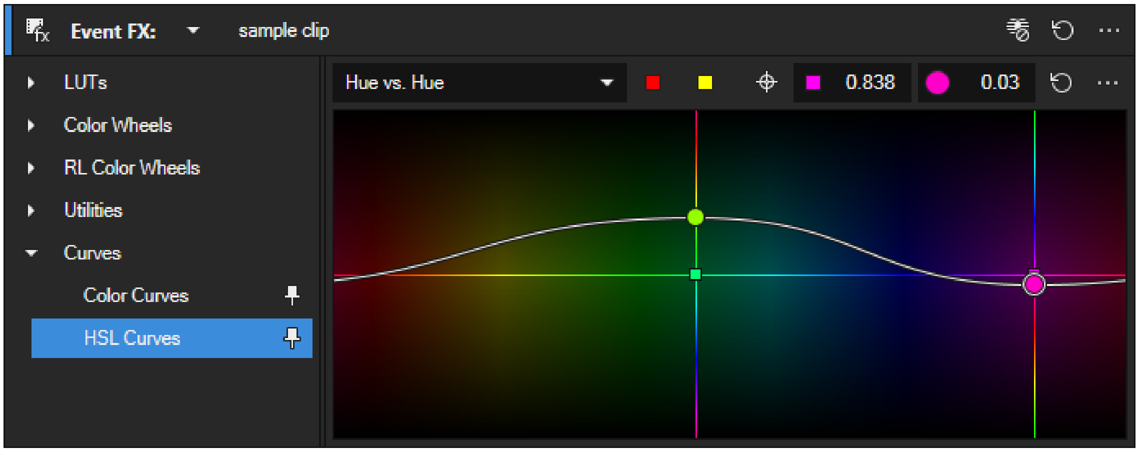

Event FX:
sample clip
LUTs
Color Wheels
RL Color Wheels
Utilities
Curves
Color Curves
HSL Curves
Hue vs. Hue
0.838
0.03

FIGURE *HSL Curves overview*

Choose a curve type

1. Open HSL CURVES.
2. Open the type menu and choose a curve.

Curve type	What it maps	Typical use
Hue vs. Hue color curve	Input hue on X to output hue on Y.	Shift a selected hue range to a nearby hue.
Hue vs. Saturation color curve	Input hue to saturation amount.	Boost or reduce saturation of one color range only.
Hue vs Luminance color curve	Input hue to luminance amount.	Brighten or darken a color range without shifting other hues.
Saturation vs. Saturation color curve	Input saturation level to output saturation.	Protect neutrals while boosting only already saturated areas.
Saturation vs Luminance	Input saturation to luminance.	Raise or lower brightness based on saturation level.
Luminance vs Saturation	Input luminance to saturation.	Add saturation in midtones while keeping shadows and highlights cleaner.

Add and edit points

- **Add a point**: double click the curve where you want to target a color or luminance range.
- **Move a point**: drag it or use `Arrow` keys. Use `Shift + Arrow` or `Ctrl + Shift + Arrow` to adjust tangents.
- **Remove a point**: double click the point or middle click it.
- **Reset the curve**: click RESET in the toolbar to restore the default curve.
- **Delete all points**: open the options menu and choose DELETE ALL.

Add via color swatches

- Click a color swatch above the spectrum to add a point for that exact hue.
- Click the gray swatch to open a color picker and choose any other hue.

> **NOTE** The numeric fields above the spectrum display the exact values of the selected point.

> **TIP**
> If your selection spans the hue wrap around red, drag the spectrum so red sits near the middle. This makes creating and adjusting a three point range easier.

Point context menu

A point's context menu provides additional controls. Right click a curve point to open it.

LOCK TANGENTS	Controls how the handles relate to each other on the selected point. - **Selected**: both handles move together. - **Not selected**: handles move independently.
SMOOTH CURVES	Applies a gradual start, stronger mid section, and gradual end. Behavior cannot be edited.
ALL TANGENTS	Shows tangent handles on all points so you can shape the curve everywhere.
SELECTED TANGENTS	Shows tangent handles only on the selected point for precise edits.
LOCK AXIS	Restricts the point to vertical movement so its hue stays fixed. **NOTE** You can still move the point horizontally by dragging the vertical hue line.
RESET	Resets both the point's curve shape and vertical position. Reset only the shape: double click the point. Reset only the vertical position: double click the small anchor on the curve at the point's horizontal location.
DELETE	Deletes the selected point. You can also delete with a middle click.

Select colors with the Color Selector

⌖ The COLOR SELECTOR samples a hue or a range in the VIDEO PREVIEW and places points on the curve for targeted adjustments.

Option A – Pick a single point

- Click COLOR SELECTOR.
- Click a colored area in the VIDEO PREVIEW to add one point at that hue.

Option B – Create a hue range

- If needed, clear the curve with DELETE ALL in the options menu.
- Click COLOR SELECTOR, then click and drag a rectangle across the desired colors in the VIDEO PREVIEW.

  This creates three points: the outer points define the selected hue range, the middle point is the mean value of the sampled colors.
- Adjust the middle point to modify only the hues inside the selected range.

> **NOTE** With only one point on the curve, adjustments affect all hues until you define a range.

Options

Option	Purpose
SMOOTH CURVES	Applies a smooth easing shape for gentle transitions along the curve. Useful for broad, natural changes.
ALL TANGENTS	Shows tangent handles on all points so you can shape the curve globally.
SELECTED TANGENTS	Shows tangent handles only on the selected point to keep the view uncluttered.
LOCK AXIS	Restricts a point to vertical movement so its hue stays fixed. You can still move it horizontally by dragging the vertical hue line.
DELETE ALL	Removes all points from the current curve.

> **TIP**
> For global tint, saturation, or brightness changes use Utilities.

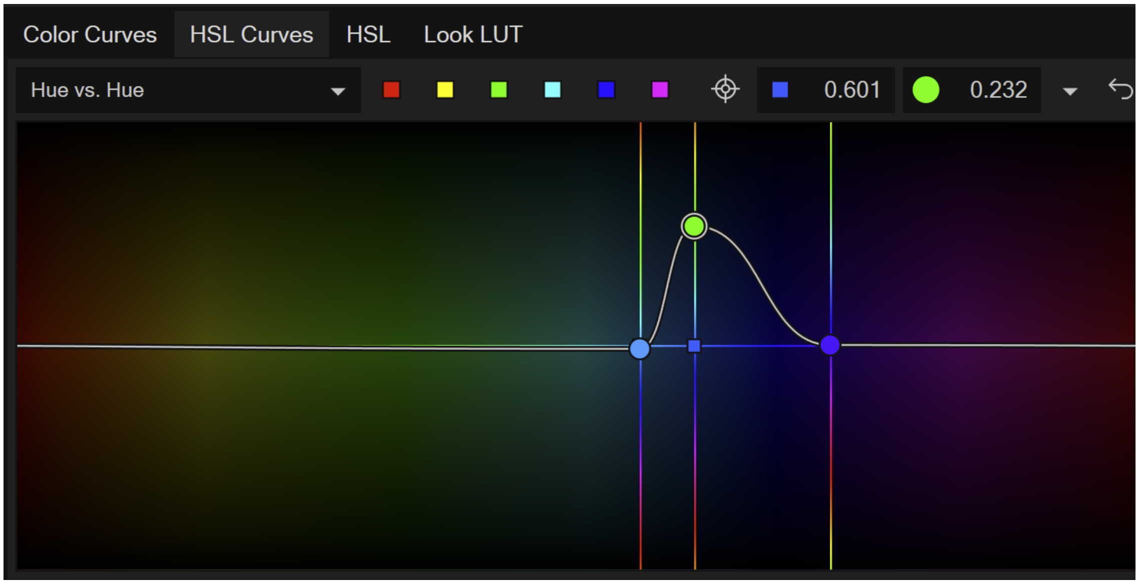
Setting the curve to its default

» Click the RESET button to remove all points from the line.

Hue vs. Hue color curve

new since VEGAS Pro 23

This curve enables you to isolate a specific range of color (hues) in your video and change the hue of that range to a different hue. For example, if someone is wearing a blue shirt, you could isolate a range of blue hues and then adjust just that range of hues to a different hue value in order to change the color of the shirt without affecting any other colors in the video (although anything within that blue range will be affected, not just the shirt). This can be used for a drastic special effect such as this, or for more subtle color grading and correction that affects just a specific color range in your video.



Using the Hue vs. Hue curves:

1. Add a video file to your timeline.

   Try to find something that has a fairly large area of a distinct solid color—like a blue shirt—so that it's easy to see as you experiment.

2. Select the video event and click the COLOR GRADING button so open the COLOR GRADING panel.

3. Click the HSL Curves tab and select Hui vs. Hui from the Curve Type drop-down list.

   The curve background shows a color spectrum that starts with red at the left, moves through various hues, and ends with red on the right. Think of this spectrum as a flattened continuous loop. The white horizontal line in the vertical center of the spectrum depicts the curve.

4. Define a range of color hues that you want to adjust.

   For instance, if you want to change the blues in your video to a different hue, define a range over the blue shades in the spectrum.

Defining a range:

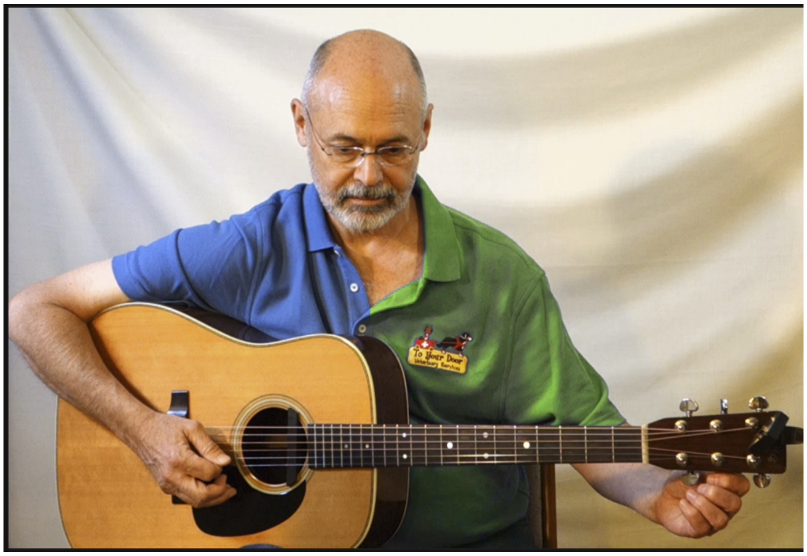
1. Double-click the curve on the left side of the blue area. This adds a point to the curve.

2. Add another point at the right side of the spectrum. Think of these two points as anchor points that define your range.
3. Now double click again in between the two points you added. You can use this point as a control point to adjust the hue of the color range you've defined. You can add as many other points to the curve as you want.

Changing to a different color:

Drag the control point up or down vertically.

> **NOTE**
> The vertical line that runs through the point identifies a second hue spectrum that you can use to target the color change you want.
>
> If you don't see the changes you expected as you move the control point, move it left and right as well as up and down. You might also want to experiment with the location of your anchor points to get the precise change you want.



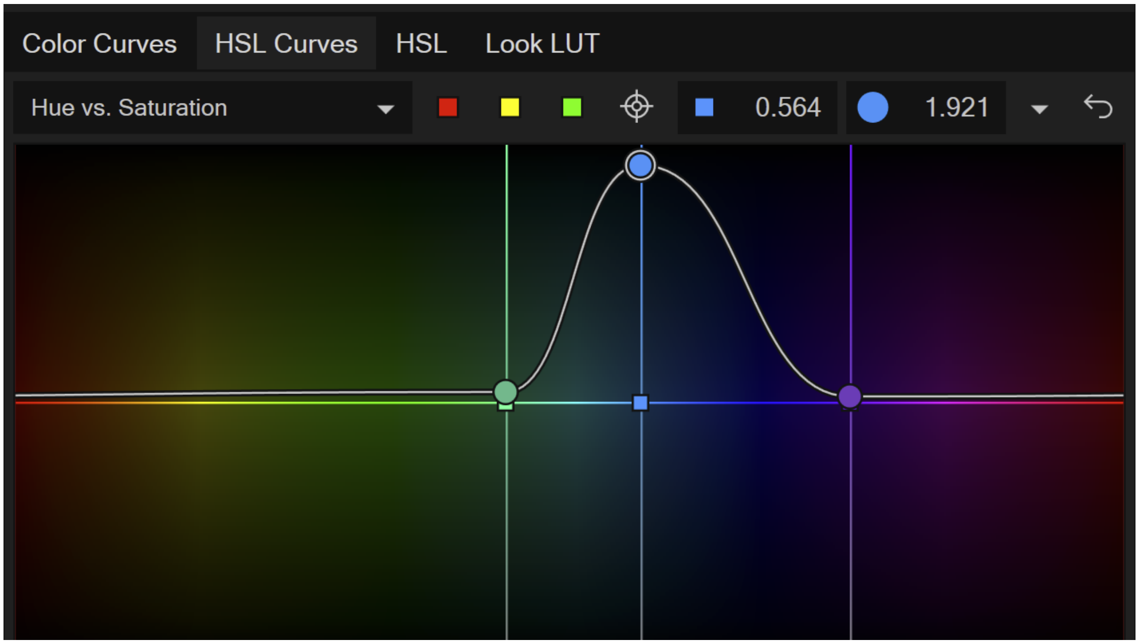
Setting the curve to its default:

» Click the Reset button to remove all points from the line.

Hue vs. Saturation color curve

new since VEGAS Pro 23

This curve allows users to define specific hues or hue ranges and adjust the saturation of those values. This provides precise control over color adjustments, allowing users to enhance or desaturate specific colors in their videos. For example, the user could define a range of blue values and raise the saturation of those values to make the blues in the video more vibrant.



Using the Hue vs. Saturation Curve

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1. Add a video file to the timeline and select the video event.
2. Click the COLOR GRADING button to open the Color Grading panel.
3. Navigate to the HSL CURVES tab and select HUE VS. SATURATION from the Curve Type drop-down list.

   The curve background shows a color spectrum that starts with red at the left, moves through various hues, and ends with red on the right. The white horizontal line in the vertical center of the spectrum depicts the curve.

Defining Color Ranges

For instance, if you want to change the saturation level of the blues in your video, define a range over the blue shades in the spectrum.

1. Double-click on the curve to define anchor points that represent the desired color range. This adds a point to the curve.
2. Add additional points within the range as needed.
3. To adjust the saturation of the defined range, drag the control point vertically.
4. Experiment with the location of anchor points and control points for precise color adjustments. Any value above the mid line adds saturation, and of course, any value below reduces saturation.

> **NOTE** The vertical line that runs through the point identifies a a saturation spectrum that you can use to target the change you want. If you don’t see the changes you expected as you move the control point, move it left and right as well as up and down.

EXAMPLE

The adjustments have pumped up the color of the blue shirt to make it much brighter, without affecting the saturation of any of the other colors.

Desaturating everything except a defined range

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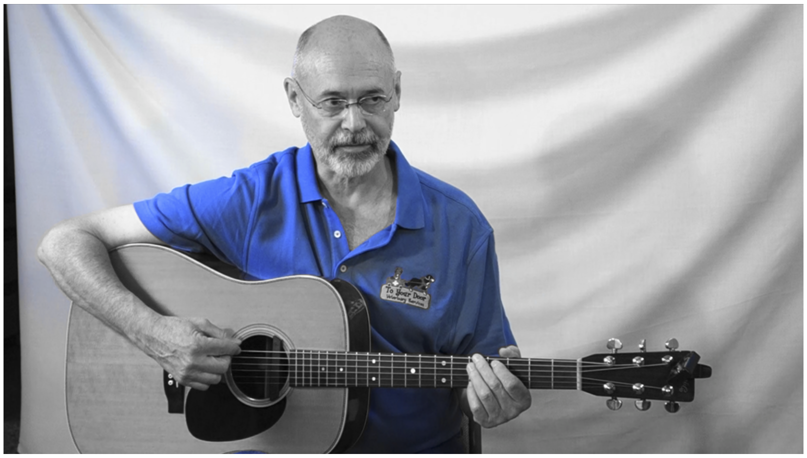
1. Drag both of the points that define the range all the way down to the bottom of the spectrum. This pulls the color out of everything outside of the range.
2. Use the middle control point to adjust the saturation within the defined range.

3. Fine-tune the range end points or add more points to achieve the desired isolation effect.

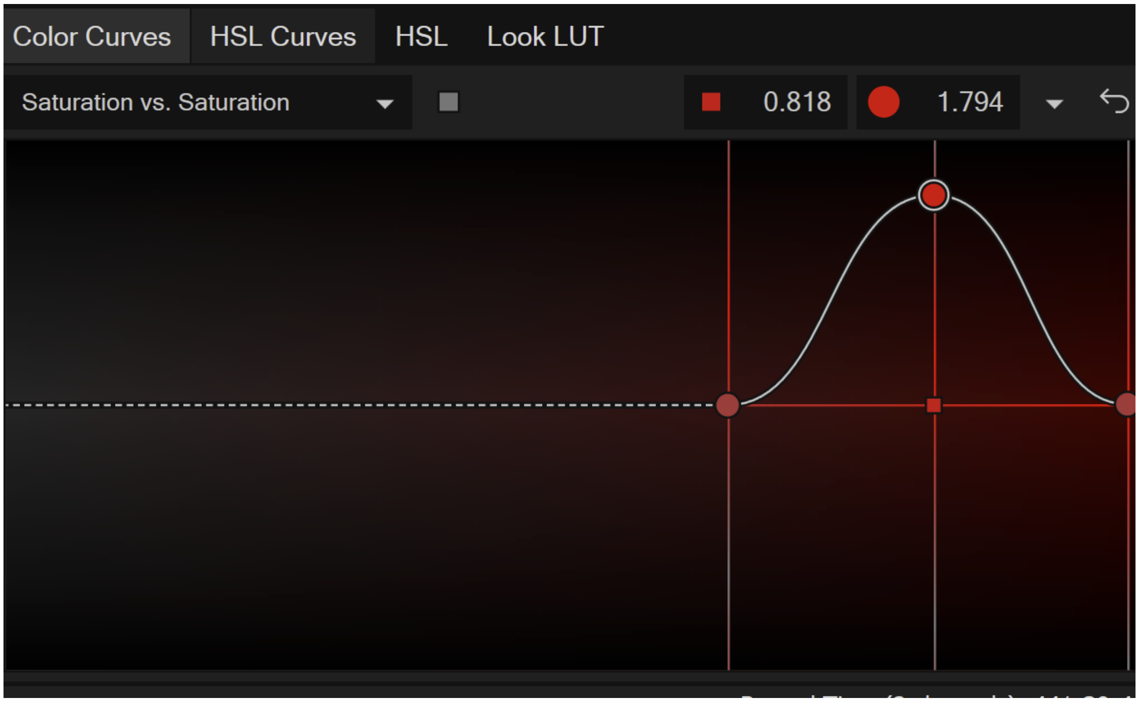


To adjust the saturation of the entire video, click the Reset button to set the curve back to the default settings. Double-click the curve to add a control point to it. Drag the control point up. This adds saturation to the entire video. Drag the point down. This removes saturation. Drag the point fully down. This completely desaturates the colors in the image so that you end up with a grayscale image with no color. Note that when the curve has just one point, it doesn't matter where you locate that point horizontally—it always adjusts the entire curve which remains flat and thus effects the entire video.

Saturation vs. Saturation color curve

new since VEGAS Pro 23

This curve enables the user to define a range of saturation levels in the video and then adjust the saturation level of just that range. This enables the user to control saturation levels that range from the entire video to very targeted areas of the video based on current saturation levels. For example, the user could define a saturation range that includes everything below a level of 150 and remove the saturation from that range so that everything that was originally below 150 would now be completely desaturated.



Using the Saturation curves

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1. Add a video file to your timeline.
2. Select the video event and click the COLOR GRADING button to open the Color Grading panel.
3. Click the HSL CURVES tab and select SATURATION VS. SATURATION from the Curve Type drop-down list.
4. The curve background shows a saturation spectrum that starts with fully desaturated at the left and ends with fully saturated on the right. The white horizontal line in the vertical center of the spectrum depicts the curve.
5. Adjust the saturation of the entire video
   - Double-click the curve to add a control point to it.
   - Drag the control point up.

     This adds saturation to the entire video.
   - Drag the point down.

     This removes saturation.

- Drag the point fully down.

  This completely desaturates the colors in the image so that you end up with a grayscale image with no color.

  > **NOTE** When the curve has just one point, it doesn't matter where you locate that point horizontally—it always adjusts the entire curve which remains flat and thus effects the entire video.

6. Manipulate the curve for selective saturation adjustments
   - Add multiple control points to the curve.
   - Reposition a control point to alter the shape of the curve and affect saturation differently at different points.

     For example, say you want to target the areas of the video that already have the highest saturation and then adjust that saturation without affecting areas which already have low saturation.
   - Double-click the curve near the horizontal midpoint to add a control point.
   - Double-click toward the end of the curve to add another point.
   - Drag the control point at the end of the curve up and down to observe changes in saturation for different colors.
7. Target a specific saturation range for adjustment
   - Add three points to the curve.

     The two points on either side act as anchors that keep the curve flat outside of the range.
   - Drag the middle point up and down.

     This alters the saturation of only the range between the two end points and enables you to target your saturation adjustment in a very specific manner.

Check saturation values and customize colors

- When selecting a point on the curve, check the exact vertical and horizontal saturation values in the text fields above the spectrum.

- To change the saturation color, click the color indicator in front of the value and select a new color from the color chooser.
- Dark colors have higher saturation, while light colors have lower saturation.

Hue vs Luminance color curve

new since VEGAS Pro 23

This curve enables you to define a hue or the average of a range of hues in the video and then adjust the luminance of just that color. This way you can control luminance levels that range from the entire video to very targeted areas of the video based on selected hue. For example, you could sample a range of blues and then increase the luminance to make the color look brighter.

Using the Hue vs. Luminance curve

1. Add a video file to the timeline and select the video event.
2. Click the COLOR GRADING button to open the Color Grading panel.
3. Navigate to the HSL CURVES tab and select HUE VS. LUMINANCE from the Curve Type drop-down list.

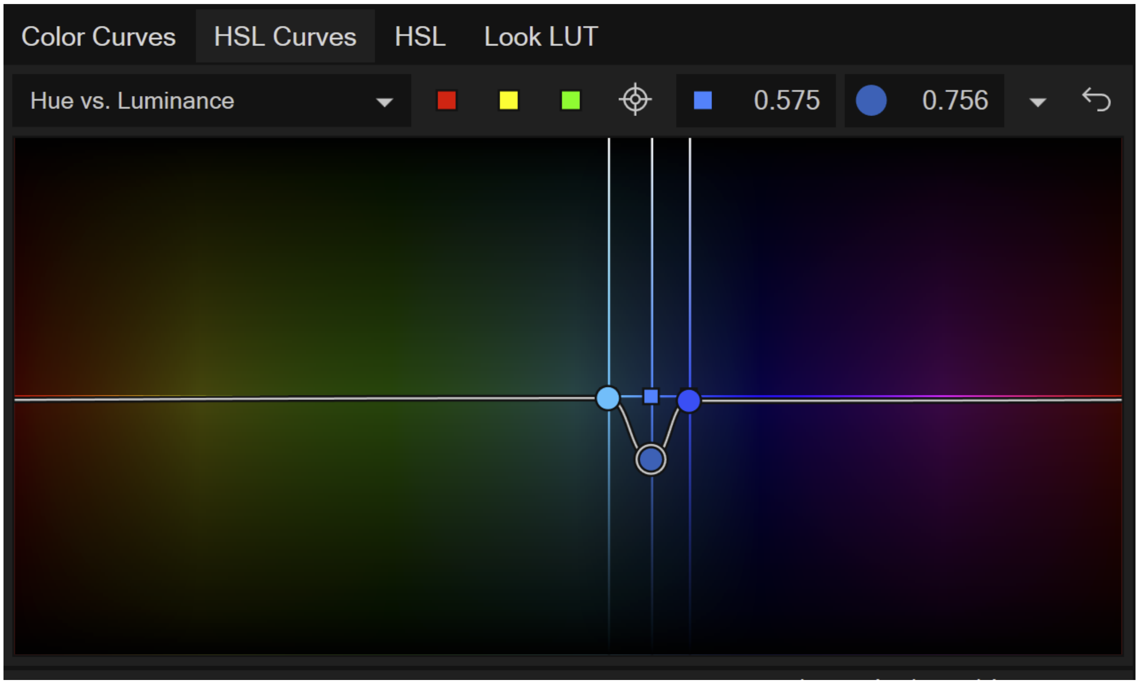
   The curve background shows a color spectrum that starts with red at the left, moves through various hues, and ends with red on the right. The white horizontal line in the vertical center of the spectrum depicts the curve.

Defining a range of color hues that you want to adjust

For instance, if you want to change the luminance level of the blues in your video, define a range over the blue shades in the spectrum.

1. Double-click the curve on the left side of the desired color range to add a point to the curve.
2. Add another anchor point on the right side of the color range.
3. Double-click between the two anchor points you added to create a control point, adjusting the saturation of the defined color range.

   You can add as many other points to the curve as you want.


Color Curves
HSL Curves
HSL
Look LUT
Hue vs. Luminance
0.575
0.756

4. Drag the control point vertically:
    - Any value above the mid line adds luminance.
    - Any value below reduces luminance.

The vertical line that runs through the point identifies a luminance spectrum that you can use to target the change you want. If you don’t see the change you expected as you move the control point, move it left and right as well as up and down.

Changing Saturation of Non-Selected Color Range

---

1. Drag both anchor points defining the range to the bottom of the spectrum. This pulls the color out of everything outside of the range while with the middle point you can still add more saturation to the selected color if you want to.
2. Adjust the range end points and add more points to the curve if needed for desired isolation effects.

Adjusting the luminance of the entire video

---

1. Click the Reset button to restore the default curve settings.
2. Double-click the curve to add a control point.
3. Drag the control point up to increase luminance or down to decrease luminance.

> **NOTE** A single control point affects the entire curve and, consequently, the entire video.

Luminance vs Saturation

new since VEGAS Pro 23

This curve enables you to define a range of luminance levels in the video and then adjust the saturation level of just that range. You can control saturation levels that range from the entire video to very targeted areas of the video based on current luminance levels. For example, you could define a luminance range that includes everything above a certain level and raise the saturation on that range to make everything in that luminance range look more vibrant.

FIGURE *Saturation adjustment example: Woman's pants and wall fully desaturated, while the bright sky remains unaffected.*

Using the Luminance vs. Saturation curve

1. Add a video file to the timeline and select the video event.
2. Click the COLOR GRADING button to open the Color Grading panel.
3. Navigate to the HSL CURVES tab and select LUMINANCE VS. SATURATION from the Curve Type drop-down list.

   The curve background shows a luminance spectrum that starts with dark at the left and ends with bright on the right. The white horizontal line in the vertical center of the spectrum depicts the curve.

Adjusting the saturation of the entire video

- Double-click the curve to add a control point to it.
- Drag the control point up to increase saturation or down to decrease saturation.
- Fully dragging the point down desaturates the colors, resulting in a grayscale image.

> **NOTE** When the curve has just one point, it doesn’t matter where you locate that point horizontally—it always adjusts the entire curve which remains flat and thus effects the entire video.

Modify Saturation Based on Luminance

When you add more than one point to the curve and then reposition a control point, you alter the shape of the curve and thus affect the saturation differently at different points along the curve. For example, say you want to target the areas of the video that already have the lowest luminance then adjust the saturation of that range without affecting areas which already have high luminance.

1. Double-click the curve near the horizontal midpoint to add a control point.
2. Double-click to the left of your new point to add another point.
3. Drag the left control point up and down to observe the saturation changes in the Video Preview window.
4. Adjust the point until you achieve the desired saturation effects on specific luminance ranges.

   Bright colors remain unaffected while colors with lower luminance are impacted.

Target a specific luminance range for adjustment

1. Add three points to the curve. The two points on either side act as anchors that keep the curve flat outside of the range.
2. Drag the middle point up and down. This alters the saturation of only the range between the two end points and enables you to target your saturation adjustment in a very specific manner.

> **TIP** When you select a point on the curve, you can check the exact value of the luminance and saturation levels at that point in the text fields above the spectrum.

Saturation vs Luminance

new since VEGAS Pro 23

The "Saturation vs. Luminance" curve allows you to define a range of saturation levels in the video and then adjust the luminance level of just that range. You have the flexibility to control luminance levels across the entire video or target specific areas based on their current saturation levels. For example, you can define a saturation range that includes everything below a certain level and increase the luminance for that range to make those areas appear brighter.

Using this curve

1. Add a video file to your timeline. Ensure the video contains a mix of areas with both low and high saturation levels.
2. Select the video event on the timeline and click the "Color Grading" button to open the "Color Grading" panel.
3. Switch to the "HSL Curves" tab.
4. From the "Curve Type" drop-down list, select "Saturation vs. Luminance."

The curve background shows a saturation spectrum that starts with fully desaturated at the left and ends with fully saturated on the right. The white horizontal line in the vertical center of the spectrum depicts the curve.

Adjusting Luminance for the Entire Video

- Double-click the curve to add a control point to it.
- Drag the control point up. This increases the luminance of the entire video.
- Drag the point down. This decreases luminance.

> **NOTE** When the curve has just one point, it doesn’t matter where you locate that point horizontally—it always adjusts the entire curve which remains flat and thus effects the entire video.

- Click the Reset button to remove the control point and set the curve back to its default.

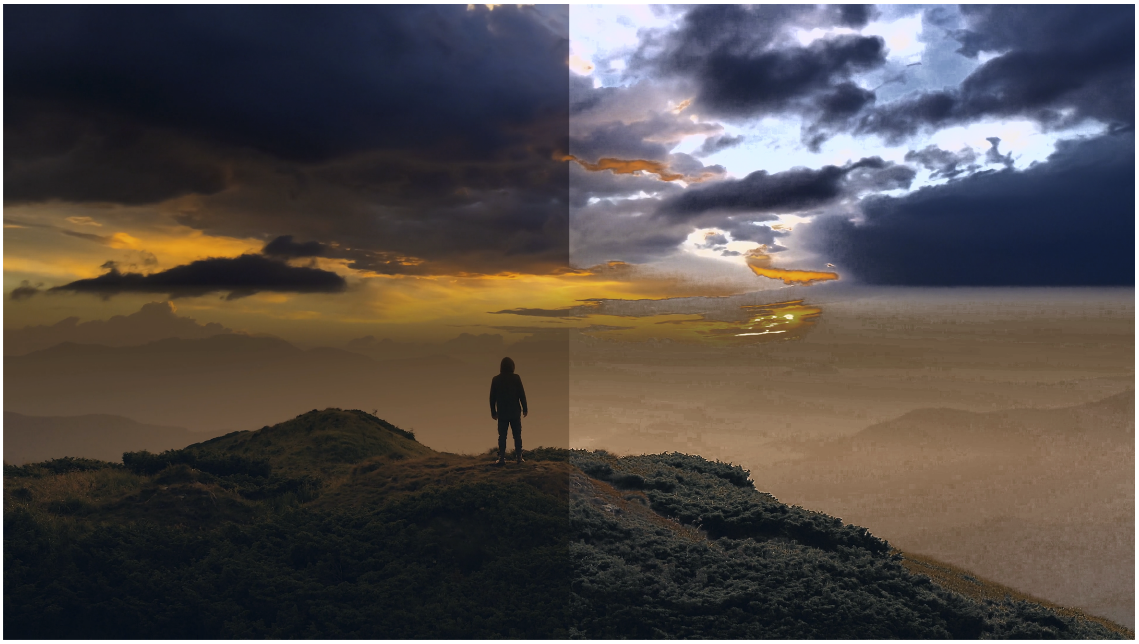
Targeting Specific Saturation Ranges

Adding multiple control points allows you to adjust luminance differently for various points along the curve.

> **EXAMPLE** For instance, to target areas with low saturation and adjust their luminance without affecting highly saturated areas:

1. Double-click the curve near the horizontal midpoint to add a control point.
2. Double-click towards the left end of the curve to add another point.
3. Drag the control point at the end of the curve up and down.

Observe the changes in the Video Preview window as you move the point up and down. Low-saturation areas will experience significant luminance adjustments, while highly saturated areas will be less or not affected at all.



In this case, the colors that were most saturated are affected while colors that were desaturated are not. In this split screen image, the luminance of the low saturation areas like the hazy gray background and the dark mountainside have been considerably brightened, while the highly saturated orange patch of sky above the man’s head hasn’t changed much if at all.

To adjust a specific saturation range:

1. Add three points to the curve. The two points on either side act as anchors that keep the curve flat outside of the range.
2. Drag the middle point up and down. This alters the luminance of only the range between the two end points and enables you to target your luminance adjustment in a very specific manner.

Monitoring video with scopes

Choose VIEW | WINDOW | VIDEO SCOPES to toggle the display of the Video Scopes window in VEGAS® Pro.

Broadcast video uses a narrower range of color than the RGB you see on your computer. When you broadcast a project that contains out-of-gamut (out-of-range) colors, you can introduce image problems or even noise into the audio stream.

Use the scopes to analyze your video and adjust accordingly with the Brightness and Contrast, Broadcast Colors, Color Corrector, Color Corrector (Secondary), and Levels plug-ins before rendering.

Choose a setting from the drop-down list to choose which scope you want to display.

> **TIP**
> You can use split-screen previews to help match colors between clips. When the split-screen preview mode is set to CLIPBOARD, the Video Preview and Video Scopes windows will display the frame you copied to the clipboard and the current frame. For more information, see Split-screen previews
>
> When you're working with a stereoscopic 3D project, video scopes measure the right-eye video unless your stereoscopic 3D mode for preview is set to LEFT ONLY.

The Vectorscope Monitor

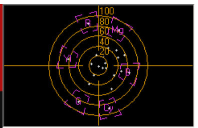
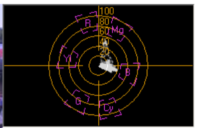
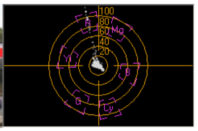
The vectorscope monitor in the Video Scopes window allows you to monitor the chroma values (color content) of your video signal. The monitor plots hue and saturation on a color wheel.

The vectorscope displays targets for broadcast-legal saturations of red (R), magenta (Mg), blue (B), cyan (Cy), green (G), and yellow (Yl). Individual colors in your video signal are displayed as dots in the vectorscope. A dot's distance from the center of the scope represents its saturation, and the angle of the line from the dot to the center of the scope represents its hue.

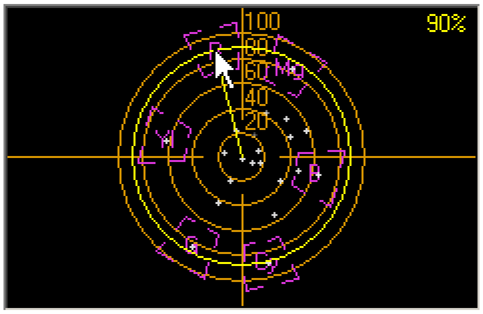
For example, if an image has a blue cast, the distribution of dots in the vectorscope will be concentrated toward the blue portion of the color wheel. If the image includes out-of-range blue values, the vectorscope display will extend beyond the blue target.

You can use the vectorscope to calibrate color between scenes. Without calibration, you may see noticeable color differences between scenes from multicamera shoots.

1. Choose VIEW | WINDOW | VIDEO SCOPES to toggle the display of the Video Scopes window.
2. Choose VECTORSCOPE from the drop-down list.
3. Position the cursor in the frame you want to analyze. If the UPDATE SCOPES WHILE PLAYING button is selected, you can monitor your video during playback.
4. The vectorscope monitor displays the chroma values of the video signal:

Frame	Vectorscope	Description
		Colors are within legal broadcast limits. Note that the dots for each color in the test pattern are centered in the appropriate target.
		The image has too much blue. Note that the display is distributed toward the blue portion of the vectorscope.
		The red in the boat cover is out of range. Note that the display extends beyond the red target.

5. Hover over a portion of the monitor to display the chroma value at the pointer position:



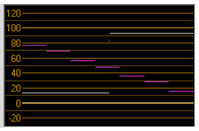
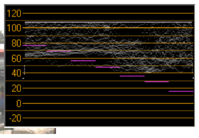
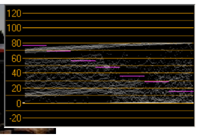
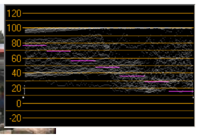
The Video Waveform Monitor

The waveform monitor in the Video Scopes window allows you to monitor the luma values (brightness or Y component) of your video signal. The monitor plots luma values on the vertical axis and the width of the current frame on the horizontal axis.

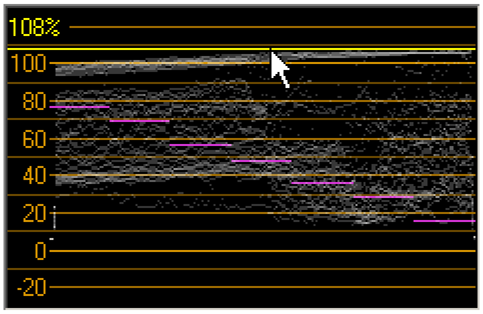
For more information, see [Monitoring video with scopes]()

> **TIP** If you want to include chroma (color or C component) information in the waveform monitor, choose COMPOSITE from the drop-down list at the top of the monitor window. When you choose LUMINANCE, chroma information is omitted.

1. Choose VIEW | WINDOW | VIDEO SCOPES to toggle the display of the Video Scopes window.
2. Choose WAVEFORM from the drop-down list.
3. Position the cursor in the frame you want to analyze. If the UPDATE SCOPES WHILE PLAYING button is selected, you can monitor the waveform during playback.
4. The waveform monitor displays the luma values of the video signal:

Frame	Waveform	Description
		The dark left half of the frame is displayed on the left of the waveform, and the light right half is displayed on the right.
		Most luma values are concentrated toward the top of the monitor, with some values exceeding the recommended peak of 110. The resulting image appears washed out.
		Most luma values are concentrated toward the bottom of the monitor. The resulting image appears too dark.
		Luma values are evenly distributed in the monitor. The resulting image appears more balanced.

5. Hover over a portion of the monitor to display the luma value at the pointer position:



The Histogram Monitor

The histogram monitor in the Video Scopes window allows you to monitor color levels and contrast of your video. Use the histogram before rendering your project to find and correct out-of-range values that could cause problems on the destination playback device.

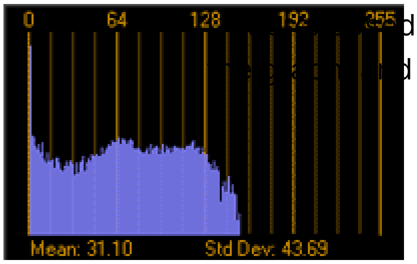
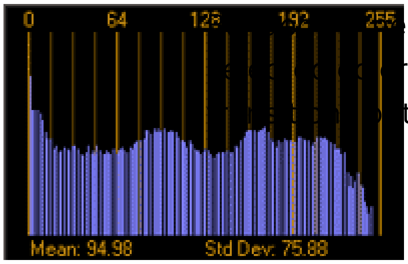
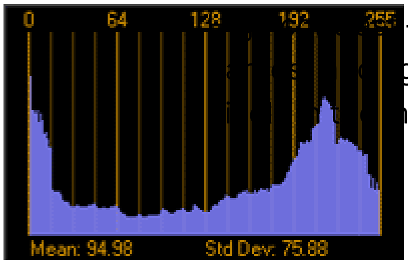
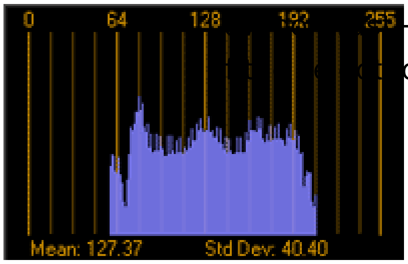
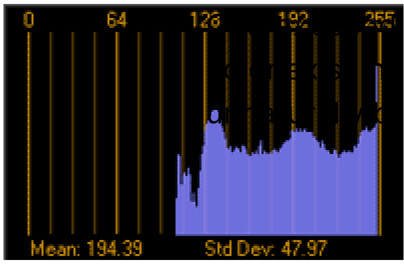
The bar graph plots the number of pixels that exist for each color intensity. For example, when using the BLUE setting, the vertical axis represents the number of pixels, and the horizontal axis represents the RGB color range from 0,0,0 to 0,0,255.

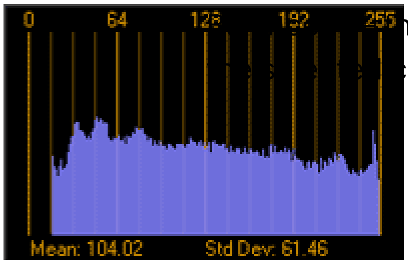
> **TIP**
> To get acquainted with the histogram, use an external monitor to preview your video and watch the video output and histogram as you use plug-ins to modify the colors.
>
> For more information, see Using an External Video Monitor

1. Choose VIEW | WINDOW | VIDEO SCOPES to toggle the display of the Video Scopes window.
2. Choose HISTOGRAM from the drop-down list.
3. Choose a histogram type from the menu:

Histogram	Description
Luminance	Charts the luminance or brightness of colors in your video.
Red	Charts the red tones in your video.
Green	Charts the green tones in your video.
Blue	Charts the blue tones in your video.
Alpha	Charts the alpha channel (transparency) in your video.
Luminance/R/G/B	Stacks luminance and RGB charts.
Lightness/a/b	Stacks lightness and a/b color charts, allowing you to analyze your video in the Lab (L*a*b* or L*, a*, b*) color space. This view is especially useful with the LAB Adjust video plug-in.

4. Position the cursor in the frame you want to analyze. If the UPDATE SCOPES WHILE PLAYING button 📊 is selected, you can monitor your video during playback.
5. Use the histogram to evaluate the colors in your video. The MEAN value Indicates the average intensity of all pixels in the graph, and the STANDARD DEVIATION value indicates the average percentage by which pixels in the graph vary from the MEAN value.

Histogram	Description
	d — pixels are concentrated on the left side of d the resulting image will appear unnaturally dark.
	re are sharp changes between the shades of the . The resulting image will appear to have sharp tween colors instead of smooth gradients.
	— there are high concentrations of pixels in the ghtest shades of the selected color with few idtones.
	— most pixels are concentrated in a limited range d color The resulting image will appear faded.
	or clipped — the lightest shades of the selected he video, and the resulting image will appear ight and washed out.

Histogram	Description
	e graph is fairly well centered within the range of olor, with few sharp transitions between shades.

The RGB Parade Monitor

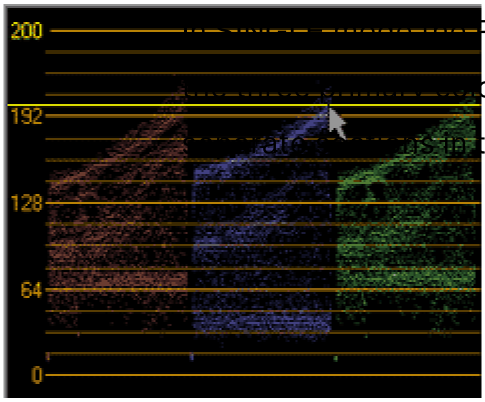
The RGB parade monitor in the Video Scopes window displays waveforms for the red, green, and blue components of your video signal. The monitor plots RGB values from 0-255.

The parade monitor helps you determine whether the individual RGB components of your video signal are within limits and whether the total video signal is clipping.

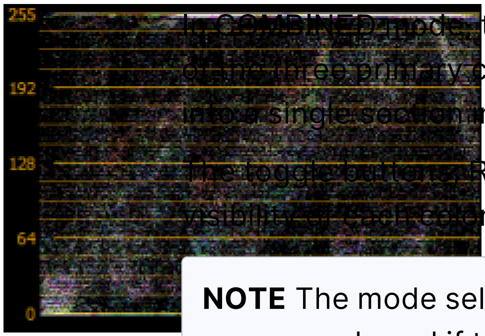
For more information, see Monitoring video with scopes

1. Choose VIEW | WINDOW | VIDEO SCOPES to toggle the display of the Video Scopes window.
2. Choose RGB PARADE from the drop-down list.
3. Position the cursor in the frame you want to analyze. If the UPDATE SCOPES WHILE PLAYING button is selected, you can monitor your video during playback.
4. The waveform monitor displays the RGB values of the video signal. You can switch between two display modes: SINGLE view and COMBINED view with the drop

down menu.



In SIMPLE mode, the RGB Parade views displays the intensity of the three primary color channels (Red, Green, Blue) as three separate sections in the view area.



In COMBINED mode, the RGB Parade views displays the intensity of the three primary color channels (Red, Green, Blue) combined into a single section in the view area.

The toggle buttons, R, G and B, is made available to control the visibility of each color channel in the combined display.

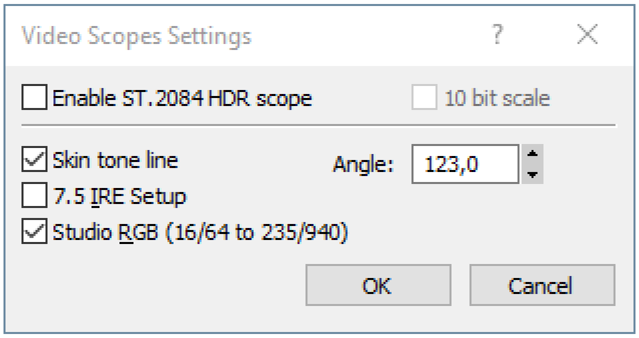
NOTE The mode selection and the visibility toggle settings are remembered if the RGB Parade view is hidden, the Video Scope view is closed, and from one VEGAS Pro session to the next.

Hover over the monitor to display the RGB value at the pointer position.

Video Scope Settings

» Click the SETTINGS button ⚙ in the Video Scopes window to set your display options.

These options adjust the display of data in the Video Scopes window and have no effect on your data.



☐ Enable ST.2084 HDR scope
☐ 10 bit scale

☑ Skin tone line
Angle: 123,0
☐ 7.5 IRE Setup
☑ Studio RGB (16/64 to 235/940)

FIGURE *Video Scopes Settings dialog*

Element	Description
Enable ST.2084 HDR Scope	Enables the HDR scope based on the ST.2084 standard for HDR video grading.
10 bit scale	Scales the HDR scope to a 10-bit range.
Skin tone line	Displays a reference line at 123 degrees on the vectorscope to assist in skin tone adjustments.
Angle	Sets the angle of the skin tone line, typically set to 123 degrees for NTSC.
7.5 IRE Setup	Adjusts black levels to 7.5 IRE for NTSC video in the United States.
Studio RGB (16 to 235)	Limits RGB display range to 16-235 for Studio RGB standards.

Skin Tone Line

The SKIN TONE LINE can be used as a reference for adjusting image color to ensure natural skin tones. This line, drawn at an angle of 123 degrees, corresponds to the "I" line of the graticule in a traditional NTSC vectorscope. All skin tone shades fall slightly to the right, a few degrees clockwise, of this line, making it a reliable guide for color correction.

1. Select the SKIN TONE LINE checkbox to enable the reference line for skin tones in the Video Scope Settings dialog.

2. Adjust the angle if necessary, although 123 degrees is the standard setting for NTSC vectorscope reference.

Toggle 7.5 IRE Setup

If your video hardware will add a 7.5 IRE setup, you can configure the Video Scopes window so the display will be consistent with an external scope connected to a device that adds 7.5 IRE setup.

NTSC video in the United States adds 7.5 IRE setup to convert black to 7.5 IRE. Consumer video hardware typically does not add 7.5 IRE setup, and most professional hardware allows you to turn 7.5 IRE setup on or off. PAL video and NTSC video in Japan do not add setup.

Refer to your video hardware documentation to determine whether your hardware adds 7.5 IRE setup.

1. Select the 7.5 IRE SETUP checkbox in the Video Scopes Settings dialog.

   Black will be displayed as 7.5 in the waveform monitor. If your video hardware does not add 7.5 setup, clear the check box.

Toggle Studio RGB Display

RGB values on your computer can range from 0 to 255. Studio RGB values range from 16 to 235. If you want to limit the display of the Video Scopes window to studio RGB standards, perform the following steps:

1. Select the STUDIO RGB (16 TO 235) checkbox in the Video Scopes Settings dialog.

Codec	Studio RGB Setting
Vegas DV	On
Microsoft DV	Off
Matrox DV	Off
MainConcept DV	Off
Canopus	On

You can render using a third-party DV codec by choosing a specific codec from the VIDEO FORMAT drop-down list on the Video tab of the Custom Template dialog.

For more information, see Custom rendering templates

S-Log and ACES workflow

VEGAS® Pro supports the expanded dynamic range of cameras using S-Log encoding, such as the Sony PMW-F3 camera. S-Log is a technique for recording the full dynamic range of the camera, and is not restricted to the limited number of stops available in display-referenced Rec. 709 encoding. S-Log encoding is not intended for direct viewing or broadcast, and requires that the shots be graded in post-production to create pleasing output for video or cinema (digital or film).

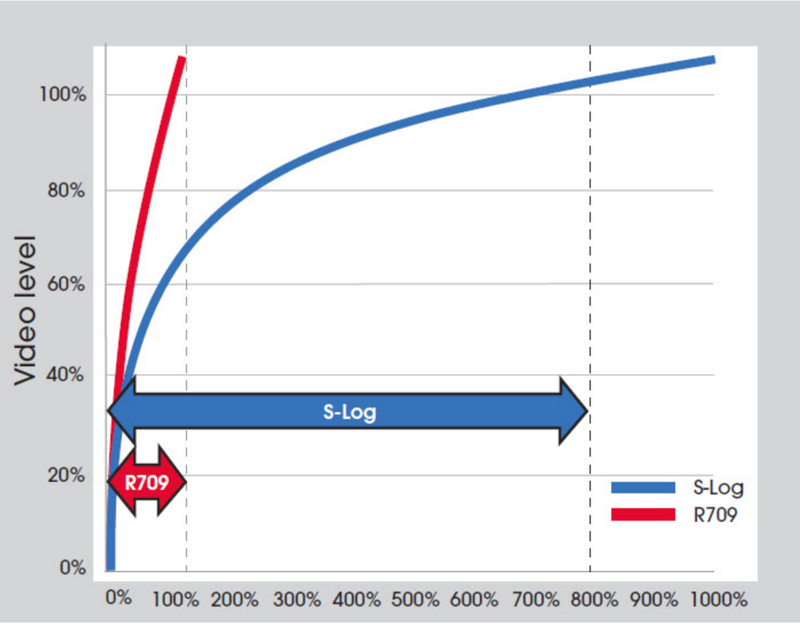
To support this higher dynamic range, VEGAS Pro supports the Academy Color Encoding System (ACES) created by the Academy of Motion Picture Arts and Sciences technology committee. The ACES color space can encode any color that can be seen and supports high dynamic range cameras and output devices made today and in the future. Various input devices (such as cameras) are transformed into the ACES color space using device-specific Input Device Transforms (IDTs).

Once transformed into the ACES color space, supported cameras can be intercut with each other and mixed with Computer Generated Imagery (CGI) in a scene-linear color space ideal for compositing and color grading. A standard Reference Rendering Transform (RRT) is applied to the final image and then various device-specific Output Device Transforms (ODTs) are applied for viewing and file output.

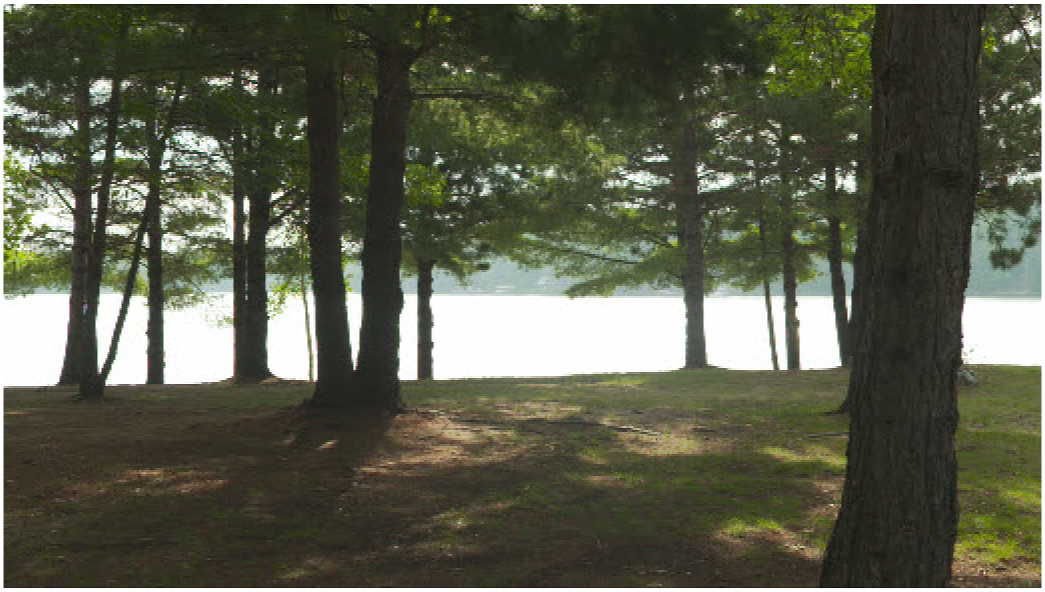
VEGAS Pro uses the OpenColorIO technology developed by Sony Pictures Imageworks. OpenColorIO is a complete color-management solution geared towards motion picture production with an emphasis on visual effects and computer animation. OpenColorIO provides a straightforward and consistent user experience across all supporting applications while allowing for sophisticated back-end configuration options suitable for high-end production usage.

Using OpenColorIO ensures that the results seen in (and output created by) VEGAS Pro are consistent with other applications supporting OpenColorIO, including Nuke, Mari, Katana, and Silhouette. Furthermore, if a particular project or editing house wants to work in a different color space, VEGAS Pro supports switching the color space, input transforms, viewing transforms, and rendering transforms simply by changing the active OpenColorIO configuration. Sample configurations for the Sony Pictures Imageworks VFX and animation pipelines, for example, can be found on the OpenColorIO Web site. For more information about OpenColorIO, see http://opencolorio.org/.

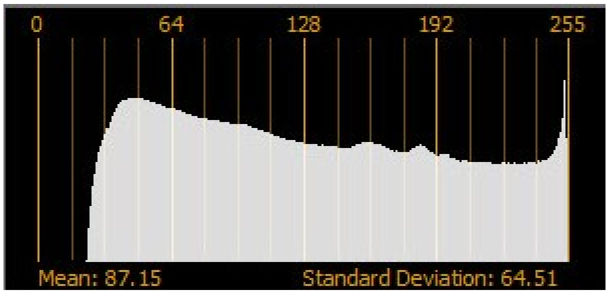
In order to capture the full dynamic range that the camera is capable of, Sony developed the S-Log encoding system, which reproportions the pixel encoding values using a logarithmic curve to capture greater dynamic range. As seen in the chart below, S-Log captures many more stops than typical video encoding:



Here is a scene shot with a Sony PMW-F3 camera without S-Log enabled:

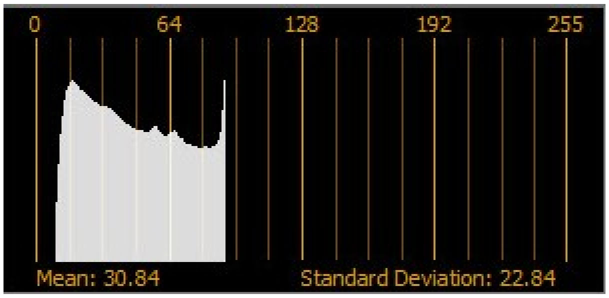


While the foreground is exposed nicely, the background is washed out. With conventional Rec. 709 video, these levels are all lost, clipped at full white, which you can see in the Video Scopes window:



Mean: 87.15
Standard Deviation: 64.51

You could use the image as-is, but if you wanted to do any color grading, the clipped levels would quickly become a problem. For example, if we bring the levels down in post, the water just gets darker:

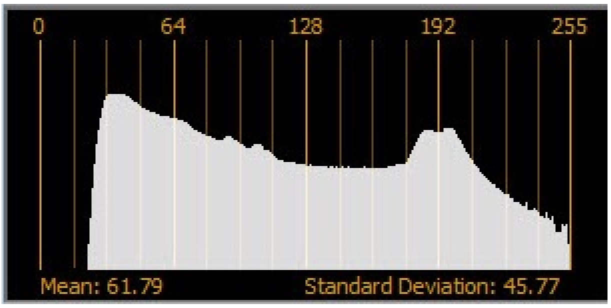


This is because traditional video is "display referenced," which means it is made to be shown directly on a display. No levels outside the monitor's range are captured.

Capturing a wider dynamic range in the scene would provide more levels to work with when we're doing color grading. That's exactly what S-Log is designed to do.

Here is the same scene shot with the same PMW-F3 camera, but this time using the SONY S-LOG1 (F35/F3) color space (viewed here in 8-bit mode):

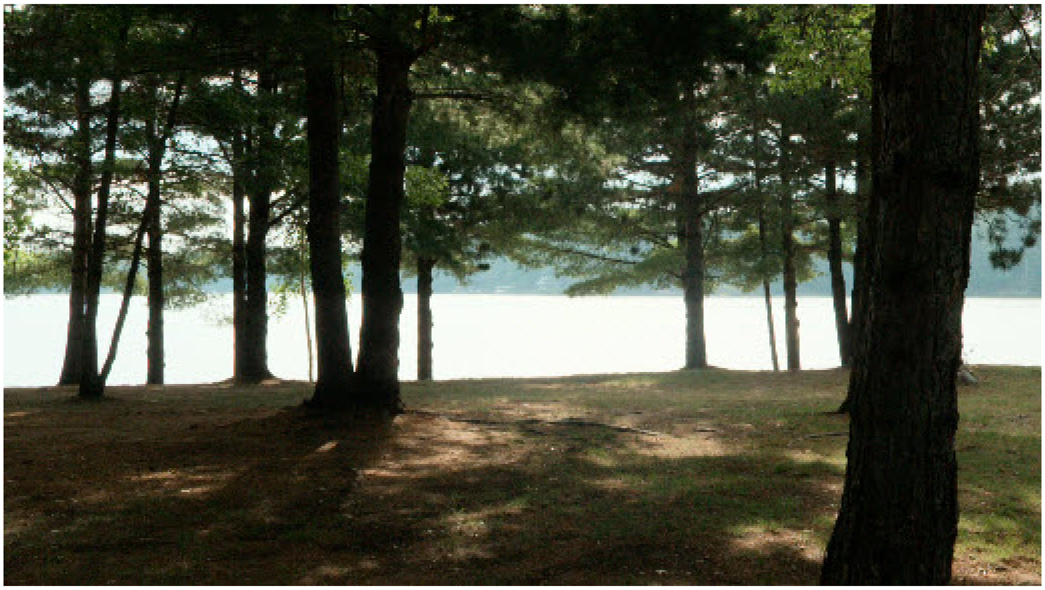
You can see that it doesn't have any clipping in the histogram (no telltale spike at the right):

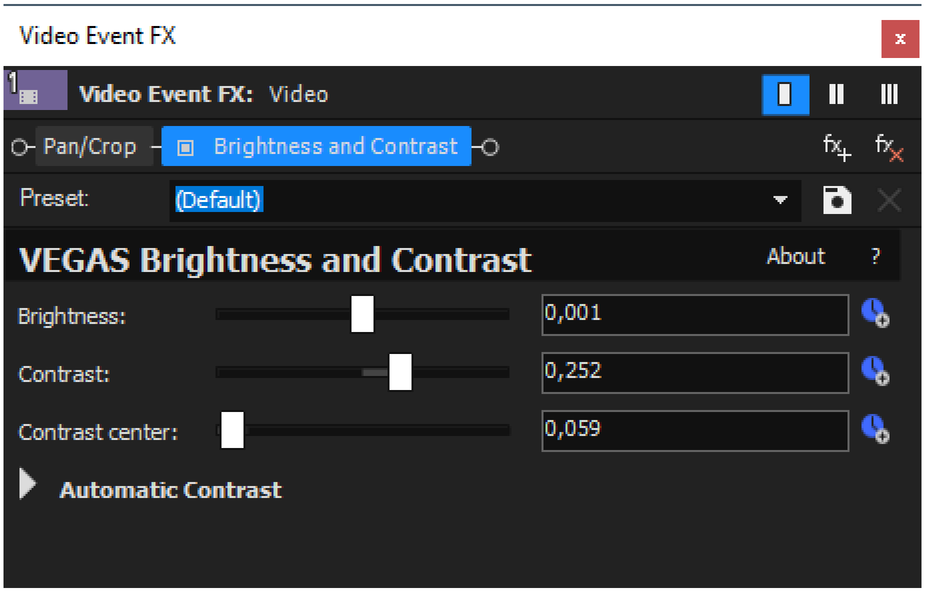


However, the picture is very low contrast and is not ready for delivery. When you shoot with S-Log, you aren't supposed to deliver that image as your final picture. You can view the image in VEGAS Pro but you must also do post-production work to create the final image for delivery.

When you unwrap the S-Log encoding into what's called a scene linear color space, you can't directly view it on a standard display. You need to run it through a reference rendering transform (RRT) that compresses the dynamic range and rolls off the highs and lows. The ACES RRT has been designed to be very film-like. When we set this source media to the SONY S-LOG1 (F35/F3) color space and view it using the ACES RRT, it initially looks like this, which is quite a bit darker than the regular video:

If we apply some gain to the image using the Brightness and Contrast plug-in, it starts to look like the regular video again, with a little more high-contrast film look:





Video Event FX
Video Event FX: Video
Pan/Crop
Brightness and Contrast
About
?
Automatic Contrast

Preset: (Default)

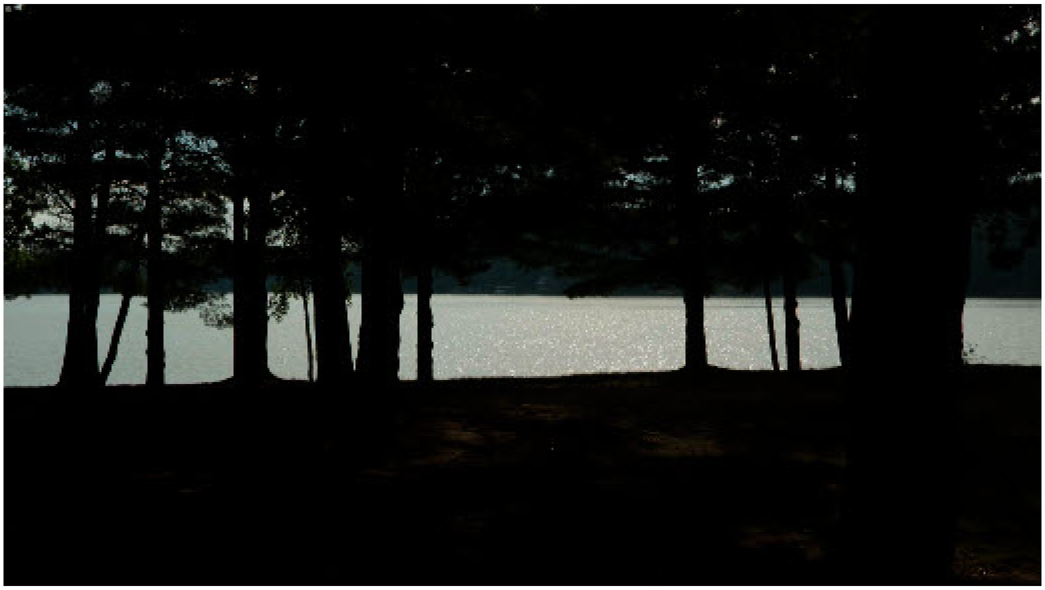
VEGAS Brightness and Contrast

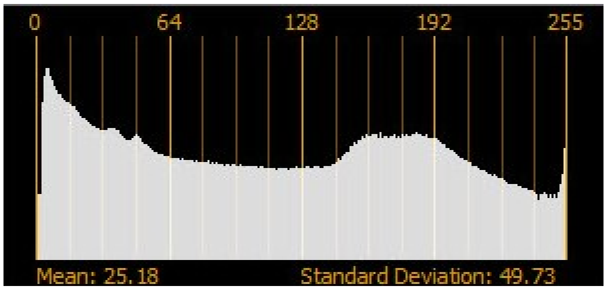
Brightness: 0,001

Contrast: 0,252

Contrast center: 0,059

In the previous image, whites are clipped. However, when we bring down the level on the shot, all of the original dynamic range is still there. In fact, if we take the level down low enough, we can even see the sun glinting off the waves, which would have been impossible with the first shot:





All of the level detail is present for color grading, film-like crossfades, fades to black, and so on. This is the beauty of S-Log and the ACES scene-linear color space.

Enabling color management in your VEGAS Pro project

VEGAS Pro supports two ACES versions

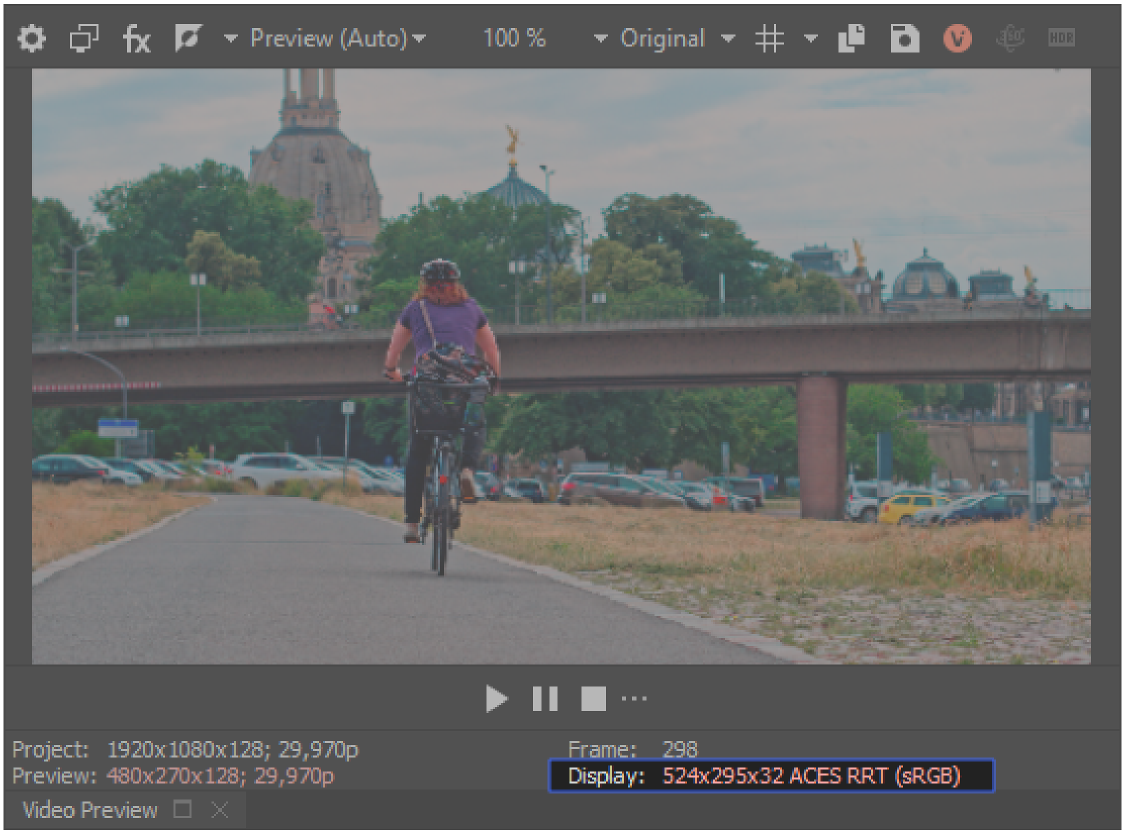
- ACES version 0.7
- ACES version 1.2

Enabling color management in your project.

1. From the FILE menu, choose PROPERTIES to display the Project Properties window.
2. In the PIXEL FORMAT list, choose 32-BIT FLOATING POINT (FULL RANGE) to make the VIEW TRANSFORM setting available.
3. ACES 1.2 is selected by default. Click the drop down arrow in the ACES version field to switch back to version 0.7 if desired.
4. In the VIEW TRANSFORM list, choose the transform best suited for your display output.
5. Click OK.

   When color management is active, the selected view transform is displayed in the

VIDEO PREVIEW window.



Project: 1920x1080x128; 29,970p
Preview: 480x270x128; 29,970p
Frame: 298
Display: 524x295x32 ACES RRT (sRGB)

Specifying the color space for individual shots

The color space setting for media files is used only when color management is enabled for your project.

1. Select one or more shots in the Project Media window and click the MEDIA PROPERTIES button ⚙ to display the Properties window.

2. On the MEDIA tab, choose a setting in the COLOR SPACE list.

Color Space	Description
ACES2065-1 (default 1.2)	This is the original ACES color space, linear light, very wide primaries, very high dynamic range (0.0 – 65504.0). This core ACES color space is used for interchange and archival format Recommended for ACES OpenEXR files conforming to SMPTE 2065-4.. Uses AP0 primaries.
ACEScc	Wide color gamut log color space, for use in color correction (“cc” for “color correction”). Also useful for any image processing which cannot handle HDR values (>>1). Uses AP1 primaries, logarithmic, can go slightly negative and a little above 1.0. Uses AP1 primaries.
ACEScct	This working color space is very similar to ACEScc , except that it adds a "toe" to make it closer to traditional "log" curves. The addition of a "toe" results in a more distinct "milking" or "fogging" of shadows when a lift operation is applied. Uses AP1 primaries.
ACEScg	A Working Space for CGI Render and Compositing”. Uses AP1 primaries.
ACESproxy	An integer log encoding for on-set preview and on-set look management. Uses AP1 primaries, logarithmic, range-limited (clipped to 0.0-1.0 code value legal range)
ACES (default 0.7)	Use ACES for OpenEXR files in the ACES color space.

3. Click OK.

Specifying the color space in a custom rendering template

The color space setting for custom rendering templates is used only when color management is enabled for your project.

1. From the FILE menu, choose RENDER AS to display the Render As window.
2. Specify a location and name for the file you want to save.
3. Select a format from the FORMATS box and a Template from the TEMPLATES box.
4. Click the CUSTOMIZE TEMPLATE button to display the Custom Template window.
5. Type a name for the template in the TEMPLATE box.
6. On the PROJECT tab, choose a setting in the COLOR SPACE list.
7. Click the SAVE TEMPLATE button 💾.
8. Click OK to return to the Render As window.

360° video

In a 360° video, the action is recorded in all directions simultaneously. 360° video can be shot with special cameras that contain two 180° lenses, or by creating an array of several normal cameras to record in different directions. In the simplest array, there are two cameras with super wide angle lenses that record in two directions; better setups use six or more cameras. The result is that the viewer can view "around" him or herself by determining the view direction.

To do so on a PC, drag the mouse during playback. On mobile devices, the built-in orientation sensor can be used: The view direction follows the device's rotation. In combination with VR glasses or a smartphone attachment such as Samsung Gear VR or Google Cardboard, it is possible to be completely submerged in a virtual environment with a 360° video. 360° videos are supported by the most important video platforms like YouTube and Vimeo.

Technically, 360° videos are regular, two-dimensional videos. The images of the sphere surface around the camera are displayed distorted, similarly to how the earth's surface is projected onto flat maps of the world. This results in relatively large videos in order to provide enough resolution along the strongly distorted edges after rectification.

Preparing a project for 360° movies

To create a 360° video or discover the interactive capacity of recorded video footage you have to set the project to a 360° project. To do so, select the PROPERTIES... option from the FILE menu or click the Project Properties button on the main toolbar ⚙.

In the PROJECT PROPERTIES dialog, on the VIDEO tab, check the 360° OUTPUT option.

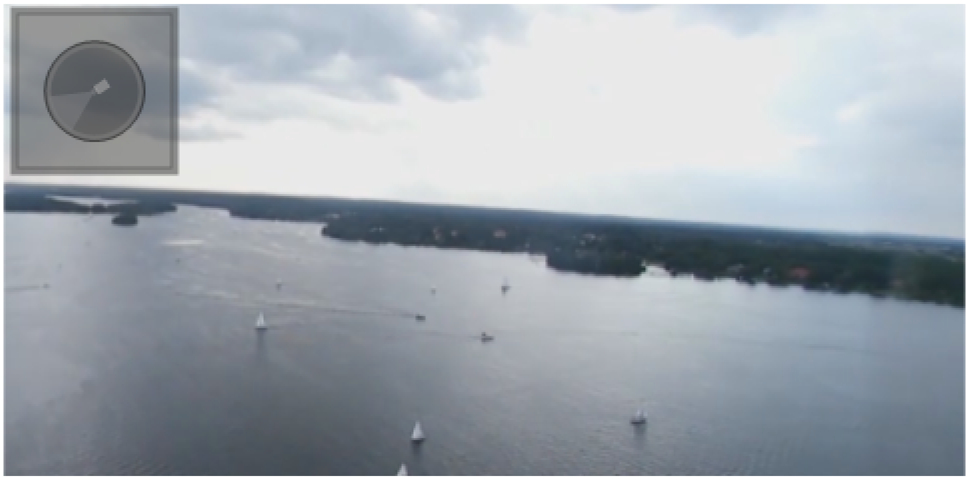
This serves two purposes:

- In the Video Preview window, a special pan&scan 360° mode becomes available to change the viewpoint, the part of the 360° panorama that is shown in the video monitor.
- When rendering or uploading the video, special properties are set in the output video file to make sure the video is recognized as 360° by the player.

The Video Preview window in 360° mode

A 360° video is a normal 2-dimensional video where the content of the 360° sphere is mapped on a rectangular surface.

Click the 360° Preview Button to switch the Preview window into 360° mode, where you can interactively adjust the perspective directly in the Preview window using the mouse.

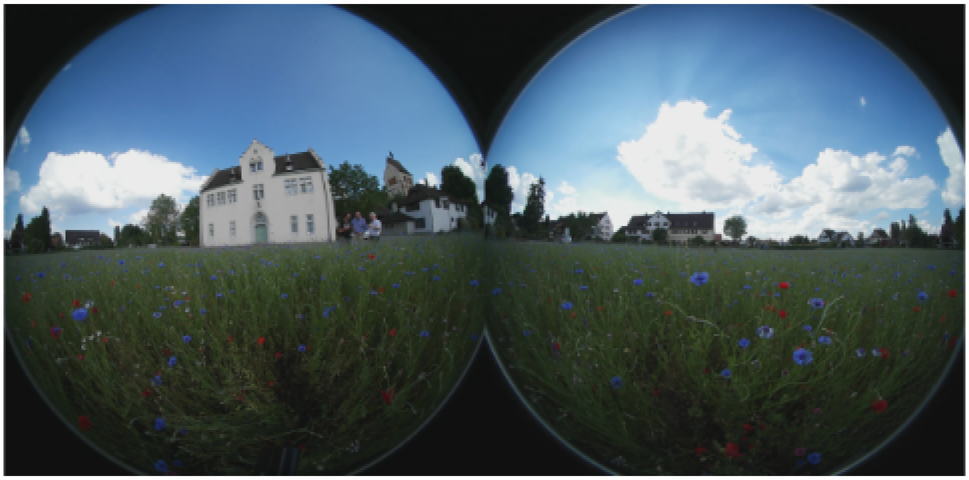


Drag with the mouse in the Preview window to change the direction. Use the moose wheel to zoom in and out the video.

> **NOTE** The 360° mode for the Preview Window is not automatically activated when switching a project to 360° because sometimes it is necessary to see the video in its original rectificated form for fine-tunig the stitching.

Stitching

Stitching describes the process of combining images from individual cameras or lenses to create one, large image and projecting the spherical image onto the rectangular surface of the video. While more advanced cameras can perform their own stitching or come with a dedicated stitching software, most simple cameras with only two lenses create a video which needs to be stitched together to create a true 360° video.

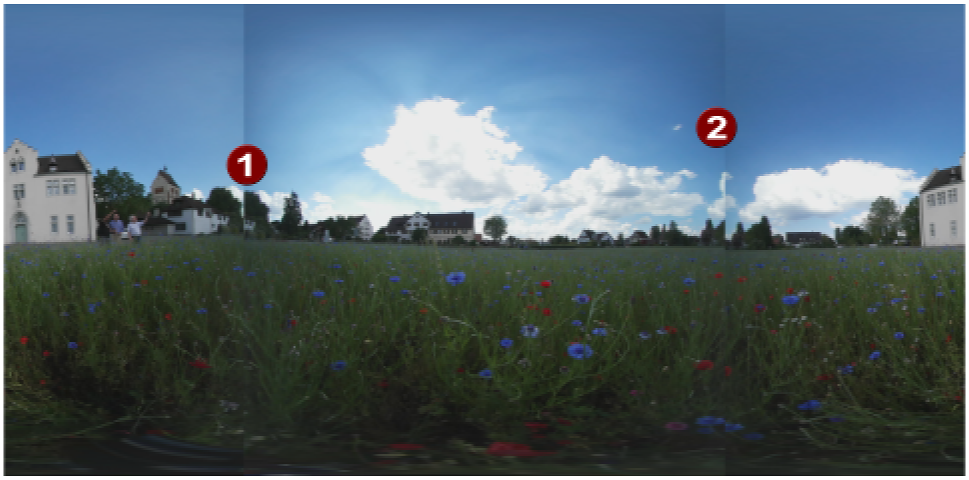


Unstitched video image from two 180° fish eye lenses on a 360° camera

These cameras often also include stitching software, but the more elegant solution is to perform stitching directly in VEGAS Pro. The stitching is performed by the video effect plug-in DUAL-FISH-EYE-STITCHING.

This is how it works:

1. Make sure, the 360° Preview mode is switched off (360 button in the Preview Window toolbar). Adjusting the view point in the preview does not work when an effect dialog is open and you will need to have a look at the whole video to adjust stitching.
2. Apply the effect on the media or event level. The video preview will now look like this:



As you can see, some fine adjustment has to be made to get a perfect result:

3. Adjust the FIELD OF VIEW slider, until the picture merges seamlessly at the edges (1).
4. As a result of the fish-eye optics the light is quite low at the border of the picture of each lens which results in a visual vignette effect at these borders (2). Click on the triangle near IMAGE VIGNETTING and adjust the INTENSITY and RANGE sliders to minimize the effect. For a comparison, you can switch off vignette removal by deactivation the REMOVE VIGNETTING check box. You can additionally experiment with the parameters under REFINEMENT for a perfect result, but in most cases this is not necessary. The image should now look like this:

5. Switch 360° preview mode on again and enjoy your panorama.

> **TIP** You will find presets for several popular 360° cameras with two lenses. For other camera models, you can change the parameters below

Exporting 360° videos

To maintain the ability to watch the 360° video in a 360° capable player it is important that the 360° OUTPUT option in the PROJECT PROPERTIES is activated. Upload your video to the video platforms to get a 360° video on the platform.

360° Video Stabilization

There is a dedicated plug-in to stabilize 360° video footage. For general usage information regarding the Video Stabilization plug-in see Stabilizing Video Clips. In the 360° variant of the plug-in, there are some additional parameters to control the stabilization.

Stereoscopy:	You can select a preset for a stereoscopic model for VR180 3D 360° video, NONE, TOP-BOTTOM and SIDE-BY-SIDE are available.
Exclude views:	You can exclude either the North or South Pole of the picture or both from the analysis, as these areas are heavily distorted by the equirectangular projection and hence will also distort the analysis.

> **NOTE** The Professional and Expert modes are not available for 360° video stabilization

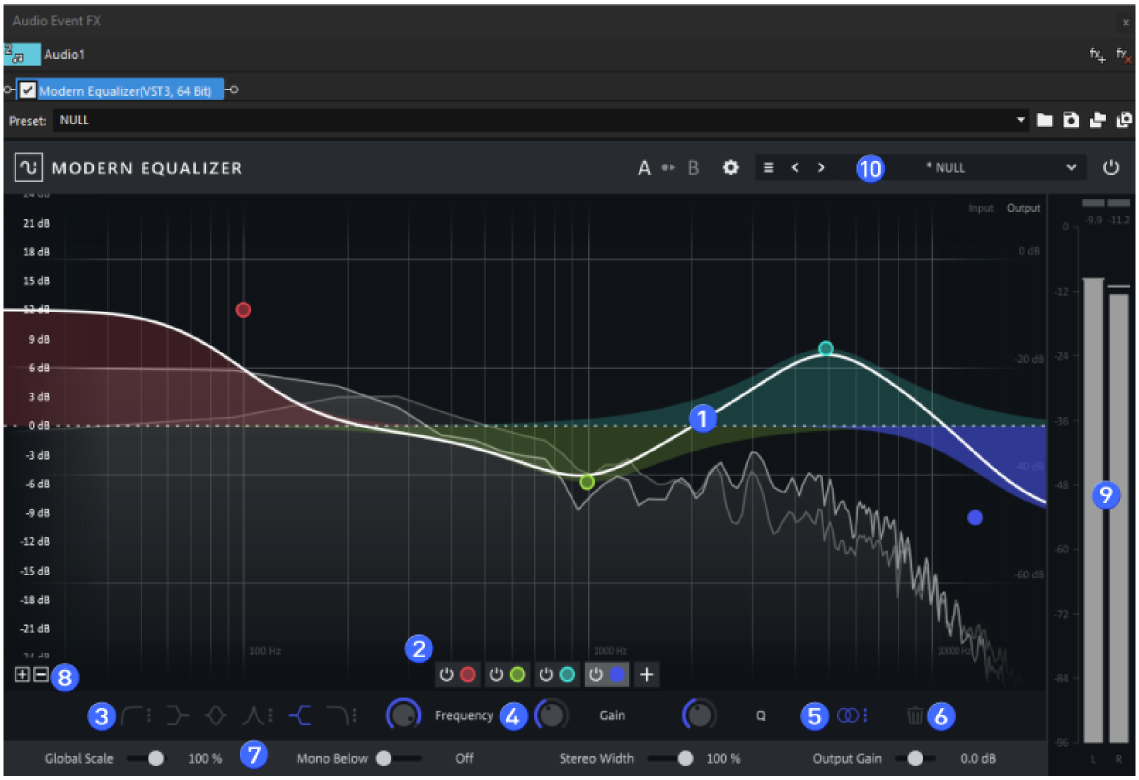
Audio Editing

Using the Modern Equalizer

The Modern Equalizer is a parametric audio effect plug-in that lets you shape the frequency content of an audio track in a precise and intuitive way. It provides up to eight adjustable filter bands and supports various filter types. Each band can be individually configured to boost or reduce specific frequency ranges, enhancing clarity, balance, or creative tone shaping.

USE CASES

- Improve overall mix quality and clarity.
- Correct unwanted resonances.
- Reduce low-end rumble in a voice recording by applying a high-pass filter.
- Shape the character of a guitar track by boosting mids and taming harsh highs.
- Create a mid/side EQ configuration to widen stereo drums and center the snare.



Preset: NULL

Global Scale 100 %

Mono Below Off

Stereo Width 100 %

Output Gain 0.0 dB

Audio Event FX
Audio1
Modern Equalizer(VST3, 64 Bit)
MODERN EQUALIZER
A
B
* NULL
10
21 dB
18 dB
15 dB
12 dB
9 dB
6 dB
3 dB
0 dB
-3 dB
-6 dB
-9 dB
-12 dB
-15 dB
-18 dB
-21 dB
Input
Output
0 dB
-20 dB
-40 dB
-60 dB
-9.9
-11.2
1
9
100 Hz
1000 Hz
10000 Hz
2
8
3
Frequency
4
Gain
Q
5
6
7
L
R

FIGURE Main interface elements

The following table explains key areas of the Modern Equalizer interface:

#	Element	Description
1	Filter Graph	Displays frequency spectrum and active filter bands. Colored areas show the effect per band.
2	Band Controls	Add, enable/disable, or delete individual bands.
3	Filter Type	Select the filter shape for each band (e.g., high pass, peaking).
4	Frequency / Gain / Q	Fine-tune each band’s characteristics via graph or knobs.
5	Channel Routing	Apply bands to left, right, mid, or side channel.
6	Delete Band	Remove the selected band.
7	Global Controls	Adjust scale, stereo width, mono filter, and output gain.
8	Zoom Control	Zoom in/out of the graph for finer adjustments.
9	Peak Meter	Visual feedback of input/output levels.
10	Preset and Settings Bar	Select or save EQ presets, open settings menu, or toggle bypass.

Open the Modern Equalizer

PREREQUISITE
Ensure that an **Audio Event** is selected in your timeline.

Editing events on the timeline

1. Click the EVENT FX button *fx* on the audio event in the timeline, or choose TOOLS | AUDIO | AUDIO EVENT FX.
2. Apply the Modern Equalizer as an AUDIO FX to the selected event.

   Adding audio event effects

Adjusting filter bands

Adjusting filter bands shapes specific frequency ranges to correct issues, enhance tone, and create space in the mix.

1. To add a filter band, click the **+** button in the lower band toolbar.
2. Select a band by clicking its colored circle in the graph. The circle turns active.
3. Choose a filter shape for the selected band from the FILTER TYPE controls.

   Optionally adjust the slope (6–36 dB/oct) via the dot menu on HP/LP/BP filters. Other filter types use a fixed 12 dB/oct.

   See Filter Types below for a quick overview of all shapes.
4. Set the channel target for the selected band (Left, Right, Mid, or Side) in CHANNEL ROUTING. The band color reflects the routing.

   See Channel Routing below for details and typical uses.
5. To change the FREQUENCY and GAIN, drag the circle horizontally or vertically.
6. Use the **mouse wheel** to adjust the Q factor (bandwidth) of peaking filters.
7. Right-click a band for options such as CUT, COPY, REPLACE.
8. Double-click a band or press the trash icon to delete it.

TIP
You can also add a new filter directly by double-clicking in the graph. The filter type is automatically selected based on the click position.

Double-click a numeric parameter to type an exact value. Press **Tab** to jump to the next field.

TIP
After shaping individual bands, use the global controls to fine-tune the result.

See Global controls

Filter Types

Icon	Filter Type	Function
	High Pass	Removes low frequencies below a set threshold
	Low Pass	Removes high frequencies above a set threshold
	Low Shelving	Boosts or cuts low frequencies with a smooth slope
	High Shelving	Boosts or cuts high frequencies with a smooth slope
	Band Pass	Isolates a specific frequency range
	Peaking	Targets a center frequency with gain adjustment

Channel Routing

Each filter band can target a stereo component. Use channel routing to fix side-specific problems or shape width and focus without changing the entire image.

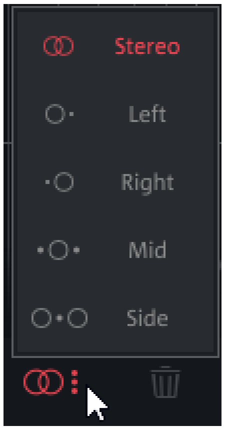


FIGURE *Channel routing menu*

Mode	Effect	Typical use
Stereo	Applies the band to left and right equally.	Default setting for general tone shaping.
Left	Affects only the left channel.	Fix a left-only resonance or balance issue.
Right	Affects only the right channel.	Correct right-only problems or create asymmetry.
Mid	Affects the center (mono) component.	Tighten vocals, bass or snare without widening changes.
Side	Affects the stereo sides only.	Add air or width; combine with MONO BELOW for mono compatibility.

Preset and Settings Bar

The Preset and Settings Bar provides quick access to A/B comparison, the settings panel, preset management and navigation, and a global bypass.

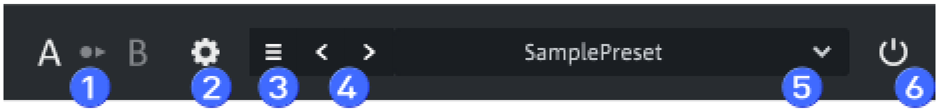


FIGURE *Preset management and settings access*

#	Control	Description
1	A/B Comparison	Switch between two settings to compare results.
2	Settings	Access zoom, rendering, oversampling, tooltip settings, etc.
3	User Preset Menu	Save, Save As, Rename, Delete, REVERT CHANGES, OPEN USER PRESETS FOLDER, RELOAD USER PRESETS. An asterisk (*) indicates modified settings.
4	Previous/Next	Cycle through available presets.
5	Preset Selection	Select a preset from factory or user categories.
6	Bypass	Temporarily disable the EQ effect.

> **NOTE**
> Factory presets cannot be overwritten. Save edits as user presets via SAVE AS....

Compare presets (A/B) and audition quickly

1. Store the current state in A, tweak the EQ, then store the new state in B.
2. Click A/B to toggle between both states while audio plays.
3. Use PREVIOUS/NEXT to audition nearby presets without leaving the bar.

Bypass the effect

1. Click BYPASS to hear the unprocessed signal.
2. Toggle it on/off while adjusting OUTPUT GAIN to level-match perceived loudness.

Apply and save user presets

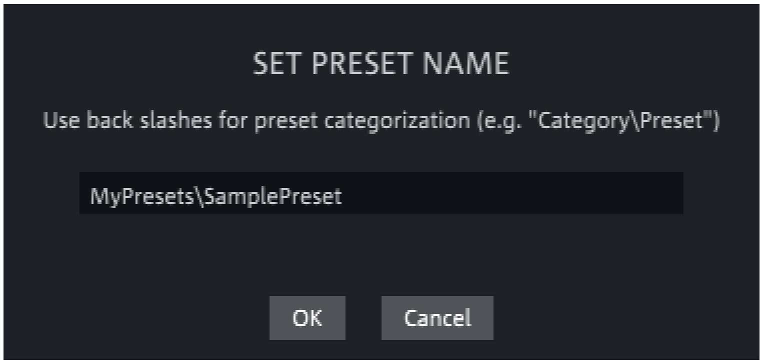
1. Open the preset menu and choose a factory preset to audition it.
2. Adjust bands or global controls as needed.
3. To keep your changes, select SAVE AS…, then enter a category and a name.
4. Find the preset under USER and select it to apply it later.

> **NOTE**
> Modified presets show an asterisk (*). Use SAVE to overwrite or REVERT CHANGES to discard edits.

User presets

Menu item	Description
SAVE AS…	Creates a new user preset. Enter a category and a name; the preset appears under the USER section.
SAVE	Overwrites the current user preset with the edited settings.
REVERT CHANGES	Restores the last saved state of the selected preset. Factory presets cannot be overwritten; save them as user presets instead.
RENAME…	Renames the selected user preset.
DELETE	Removes the selected user preset.
OPEN USER PRESETS FOLDER	Opens the file location of user presets. Categories map to subfolders; preset names map to file names.
RELOAD USER PRESETS	Refreshes the preset list after renaming or moving files in the presets folder.

> **NOTE**
> Modified presets show an asterisk (*) before the name.



SET PRESET NAME

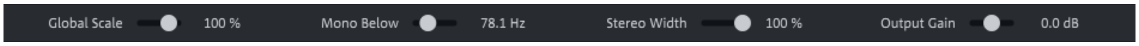
Use back slashes for preset categorization (e.g. "Category\Preset")

MyPresets\SamplePreset

FIGURE *Save preset dialog*

Global controls

The global controls affect the entire plug-in. Use them to refine the overall result or adjust width/level even without individual bands.



Global Scale 100 %

Mono Below 78.1 Hz

Stereo Width 100 %

Output Gain 0.0 dB

Control	**Description**
Global Scale	Boosts or reduces the gain of all bands simultaneously. Use it to increase or reduce the overall EQ intensity. Negative values invert the overall EQ effect.
Mono Below	Applies a high-pass filter to the side signal to enhance mono compatibility and tighten the low-end stereo image. The filter appears as a green line in the graph.
Stereo Width	Controls the amount of side signal to adjust overall width.
Output Gain	Compensates for volume differences and helps level-match the processed and unprocessed signal.

Settings

Use the Settings panel to tune interface behavior and processing quality and optimize responsiveness, readability, or fidelity.

Setting	Description
SHOW TOOLTIPS	Displays inline help when you hover controls.
DISABLE DYNAMIC LABELS	When enabled, controls always show the current value instead of switching between function label and value on hover.
DISABLE FFT ANALYZER	Turns off the real-time spectrum display to reduce GPU/CPU load.
DISABLE PEAK METERS	Hides the input/output meters to reduce UI processing.
ENABLE OPENGL RENDERING	Uses GPU acceleration for drawing; improves UI smoothness on supported hardware.
OVERSAMPLING	Sets internal processing quality (Off, 2×, 4×, 8×). Higher values reduce aliasing at increased CPU cost.
ZOOM LEVEL	Scales the plug-in interface for improved readability and screen fit.
FRAME RATE LIMITING	Limits the UI refresh rate to lower CPU/GPU usage during play-back and heavy editing.

Beat Detection

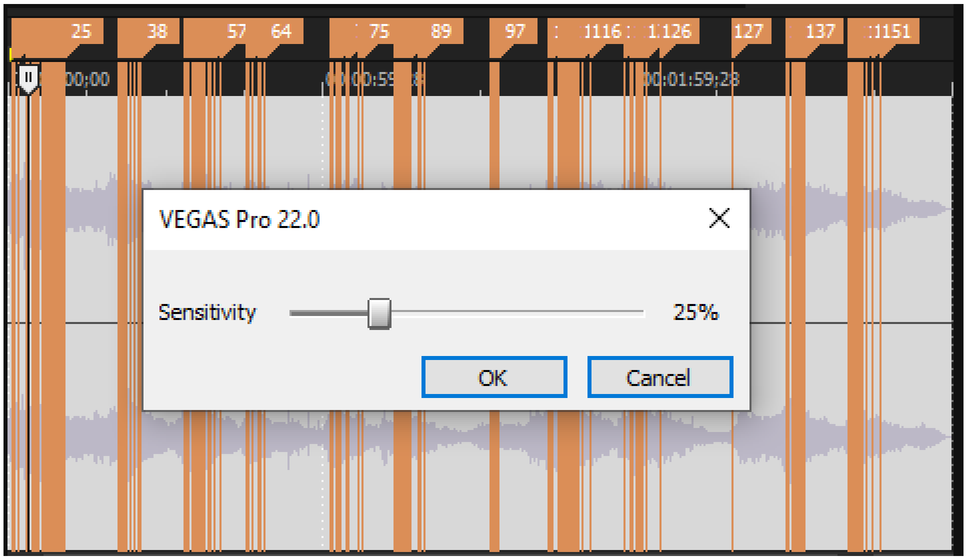
new since VEGAS Pro 22

The Beat Detection tool analyzes a music file (or music in a video file) and marks highlights, syncopated hits, drum rolls, or any “interesting” events in the low-mid and low-end of the audio frequency range. The markers serve as snap objects, so when you add the file to your timeline you can easily edit your video to the musical beats.

The Beat Detection tool works on any audio file, not just music. It can be used to locate significant audio events in a video file, such as a door slam or an explosion. The tool analyzes the mid- to low-frequency audio spectrum, detecting and marking any audio that provides extra energy in those frequency ranges.

USE CASES

- Editing a music video to sync with the beat of the music.
- Highlighting significant audio events in a video clip for precise editing.
- Identifying and marking significant moments in any audio file.



VEGAS Pro 22.0

Sensitivity 25%

Using the Beat Detection Tool

1. Add a Music File to Your Timeline. This can be a stand-alone audio file or a video file with music in the audio portion.
2. Right-click the timeline clip event that holds the music file.
3. Choose **Beat Detection** from the menu.

   The media file opens in the Trimmer window along with a Sensitivity dialog box. Markers appear in the Trimmer, indicating detected beats
4. If there are too many markers, adjust the Sensitivity slider to control the number of markers.

Increase Sensitivity to reduce the number of markers.

5. Click **OK** once the desired sensitivity is achieved.

   The markers from the Trimmer now appear in the timeline clip event.

> **NOTE**
> These markers can be used as snap objects for precise editing.
>
> Trim the edges of the timeline clip event to snap to these markers. Events on other tracks in your project will also snap to these markers, aiding in synchronized editing.

> **TIP** You can configure your trimmer toolbar to have a shortcut for the beat detection.
>
> For more information, see Trimmer Transport Tool Bar

Save markers for use in another project

Use markers to synchronize video clips precisely with the beats of a music track.

Markers are not automatically saved with the media file. Save markers if you plan to reuse the same audio file in different projects to avoid rerunning beat detection.

1. In the Trimmer window, click the **More Buttons** button.
2. Select **Save Markers/Regions** from the list.

VEGAS Pro embeds the marker metadata into the file if the file type supports it. If the file type does not support metadata, VEGAS Pro creates a sidecar file that holds the metadata.

Tempo Detection

new since VEGAS Pro 22

The Tempo Detection tool analyzes a piece of music (or the music in a video file) to determine the tempo and automatically adjusts your project properties to match the detected tempo. This feature is particularly useful for editing projects in time with the music, as it allows you to set your timeline ruler to measures and beats and use the grid for seamless cuts and edits.

USE CASES

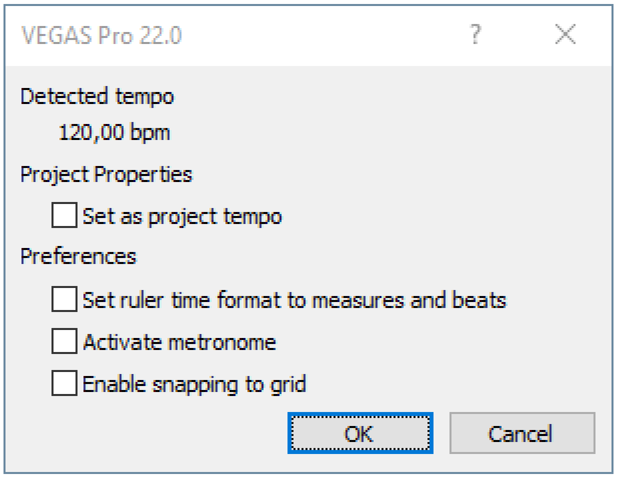
- Editing music videos to the beat of the music
- Synchronizing video cuts to musical beats
- Creating rhythm-based visual effects

Using Tempo Detection

1. Add the music file to your project timeline.

   Alternatively, you can add it to your Project Media list without adding it to your timeline if you only need to establish the tempo without placing the file in your timeline.
2. Click the **Project Media** tab.
3. Right-click the music file in the Project Media list.
4. Select **Tempo Detection** from the context menu.

   The Tempo Detection dialog box opens and displays the detected tempo.



Detected tempo
120,00 bpm
Project Properties
☐ Set as project tempo
Preferences
☐ Set ruler time format to measures and beats
☐ Activate metronome
☐ Enable snapping to grid

Dialog Element	Explanation
Detected tempo	Displays the detected tempo of the music piece in BPM (Beats per Minute).
Set as project tempo	Sets the project tempo to the detected tempo.
Set ruler time format to measures and beats	Changes the ruler format to measures and beats.
Activate metronome	Activates the metronome to count the beats during playback.
Enable snapping to grid	Enables grid snapping to facilitate precise editing at measures and beats.

5. Click **OK**.

Verify Project Properties

1. Go to **File | Properties**.
2. In the Properties dialog box, click the **Ruler** tab.
3. Verify that the project tempo matches the detected tempo.

4. Click **Cancel** to close the dialog box.

   Notice the timeline ruler now lists measures and beats instead of frames.

Adjust Timeline Ruler and Grid

1. Trim the end of the timeline clip event to align with grid markers, which act as snap points.
2. To adjust grid detail, go to **Options | Grid Spacing** and choose the desired beat resolution.

   By default, the grid shows up only at the first beat of each measure.

   For example, if you want a grid line at every beat of each measure, choose Quarter Notes from the cascading menu.

Aligning the First Beat with the Timeline Ruler

> **EXAMPLE** Say you want the music to start at beat 1.1 of the timeline ruler. That's at the very beginning of your timeline, and if the music in your event doesn't start at the very beginning of the event, your music won't line up with the ruler.

1. Ensure the first beat of your music file lines up with beat 1 in the ruler bar.
2. Trim the start of your event so it starts exactly at the first beat of the music.
3. If trimming is not an option (for instance, maybe the music actually starts a beat or two before the actual first beat of the music—known as a musical pick-up), click to place the cursor directly on the waveform at the first beat.

   > **NOTE** If necessary, disable **Quantize to Frames** to place your cursor accurately on the waveform. Remember to re-enable it afterward to avoid issues.

4. Right-click the Timeline Ruler and select **Set Time at Cursor**.
5. Type the beat position (e.g., 1.1 in this example) into the text field and press **Enter**.
6. Verify that your ruler shows the correct measure and beat at the cursor location (e.g., measure 1, beat 1) and displays negative time before that location. This ensures your ruler lines up with your beats, allowing you to edit with confidence that you are editing to important beats in the music.

Recording audio

VEGAS Pro can record audio into multiple mono or stereo tracks while simultaneously playing back existing audio and video tracks. You are limited only by the performance of your computer system and audio hardware. Audio is recorded to a media file on your computer and into an event on the timeline.

You can record into an empty track, a time selection, an event, or a combination of time and event selection. You can also record multiple takes for an event so you can maintain multiple versions of an event that you can play back and edit.

TIP

- Select a media bin before recording if you want to automatically add your recorded audio to a media bin. For more information, see Sorting your media with bins
- To save track effects with your recorded files, create an effects package of the track effect settings and apply the chain to the event as a non-real time event effect. For more information, see Sorting your media with bins and Applying non-real-time event effects
- Press Alt+Down Arrow during playback to move the edit cursor to the playback cursor.
- When the RECORD BROADCAST WAVE FORMAT checkbox is selected on the Audio tab of the Preferences dialog, VEGAS Pro records Broadcast Wave Format (.bwf) metadata when recording .wav files. You can view this information on the General tab of the Properties dialog for an event.

  Included in the .bwf metadata is a TIME REFERENCE value. This item tracks where on the timeline the file was recorded. When you import a recorded .bwf file, it is added to the timeline at the same location it was originally recorded.

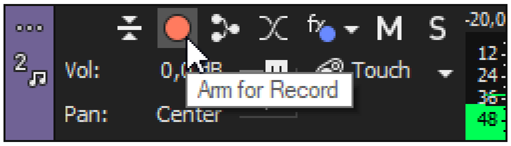
  The originator (VEGAS Pro) and originator reference (a unique ID number) are also recorded.

> **IMPORTANT** When input monitoring is on during audio recording, audio effects chains that contain non-in-place plug-ins are displayed in yellow () to indicate that automatic plug-in delay compensation is being used. Chains that cannot be used for live monitoring are automatically bypassed and are displayed in red ().

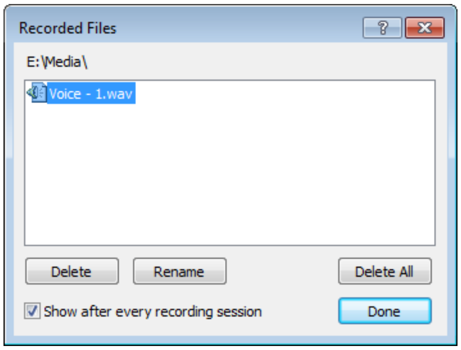
Recording audio

1. Connect an audio source to your sound card's input.
2. Position the cursor where you want to start recording.
3. Select the ARM FOR RECORD buttons ● on the tracks where you want to record. Arming a track enables it for recording.

   When a track is armed, the track meter displays the track's level. If input monitoring is not on, the meter displays the level of your input source. If input monitoring is turned on, the meter shows the level of the input source plus the track effects chain.

4. Click the RECORD button ● on the Transport bar to start recording.
5. To stop recording, click the RECORD button again or click the STOP button ■ on the Transport bar. The Recorded Files dialog is displayed.
6. Use the Recorded Files dialog to confirm the file name and location of your recorded audio. Click DELETE or DELETE ALL if you do not want to save the recorded files, or click RENAME to change the file's name.



7. Click DONE to close the Recorded Files dialog. Your recorded file is displayed as a new event in the timeline, and the recorded file is added to the Project Media window.

Recording multiple takes

If LOOP PLAYBACK is turned on for your project, playback will loop during recording and a take will be created each time playback returns to the start of the loop region. The last take recorded is set as the active take.

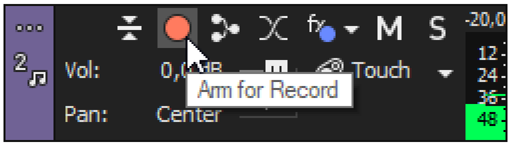
A region is created to indicate the beginning and ending of each take in the recorded file. These regions are not part of your project, but are visible in the Trimmer window.

For more information, see Using the Trimmer and Using takes as alternate versions of events

Recording a new take for an audio event

You can record into an audio event by selecting it. The record time is determined by the event's length.

1. Select the event and position the cursor at the beginning of the event.
2. Select the ARM FOR RECORD button ● on the track that contains the event.



3. Click the RECORD button on the Transport bar to start recording.

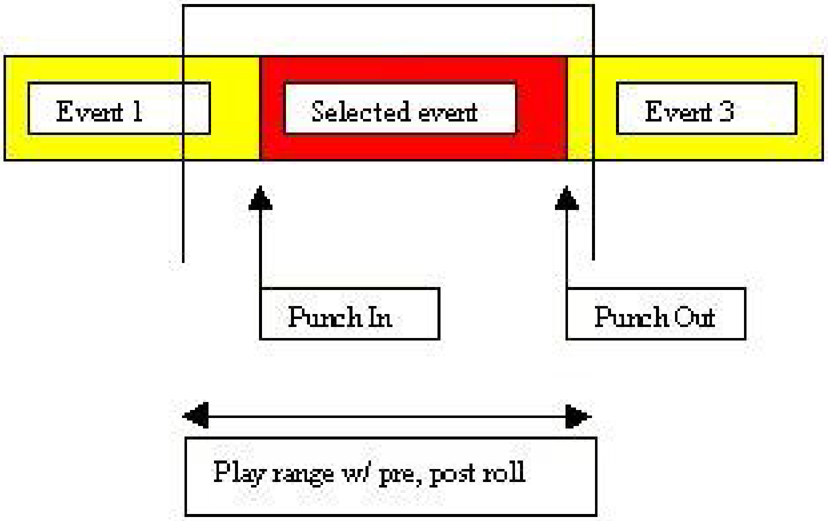
4. To stop recording, click the RECORD button again or click the STOP button on the Transport bar. The Recorded Files dialog is displayed.

> **NOTE**
>
> Select the LOOP PLAYBACK button on the Transport bar to record multiple takes within the selected event.
>
> The last take recorded is set as the active take for the event.
>
> For more information, see [Using takes as alternate versions of events]()

Recording into a time selection or event (punch-in)

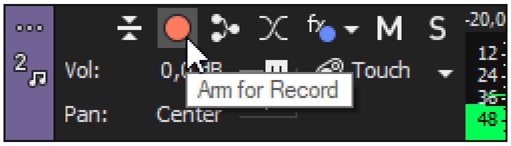
You can record a new take into a selected audio event using a time selection. This option provides room for pre-roll and post-roll during recording.

1. Select the event you want to punch into:
   - If you want to punch into the middle of an event, select the portion of the event you want to replace and press S to split the event. For more information, see [Splitting events]()
   - Select multiple events to create multiple punch-in and -out points.
2. Create a time selection to set the amount of pre-roll and post-roll and position the cursor at the beginning of the time selection. The edges of the selected events serve as the punch-in and punch-out points:


Event 1
Selected event
Event 3
Punch In
Punch Out
Play range w/ pre, post roll

3. Select the LOOP PLAYBACK button 🔁 if you want to record multiple takes of each event. A new take will be created each time the cursor passes through the selection.

4. Select the ARM FOR RECORD button ● on the track that contains the event.

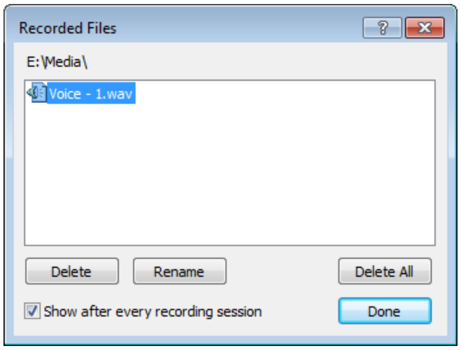

2
Vol:
0,0 dB
Touch
Pan:
Center
Arm for Record
fx
M
S
-20,0
12
24
36
48

5. Click the RECORD button ● on the Transport bar to start recording.

   If input monitoring is turned on, the track's original audio is played until the cursor reaches the selected event. When the cursor plays through the selected event, you'll hear your recording input, and the track's original audio is played again when the cursor moves past the selected event.

6. To stop recording, click the RECORD button again or click the STOP button ■ on the Transport bar. The Recorded Files dialog is displayed.

7. Use the Recorded Files dialog to confirm the file name and location of your recorded audio. Click DELETE or DELETE ALL if you do not want to save the recorded files, or click RENAME to change the file's name.


Recorded Files
?
E:\Media\
Voice - 1.wav
Delete
Rename
Delete All
☑ Show after every recording session
Done

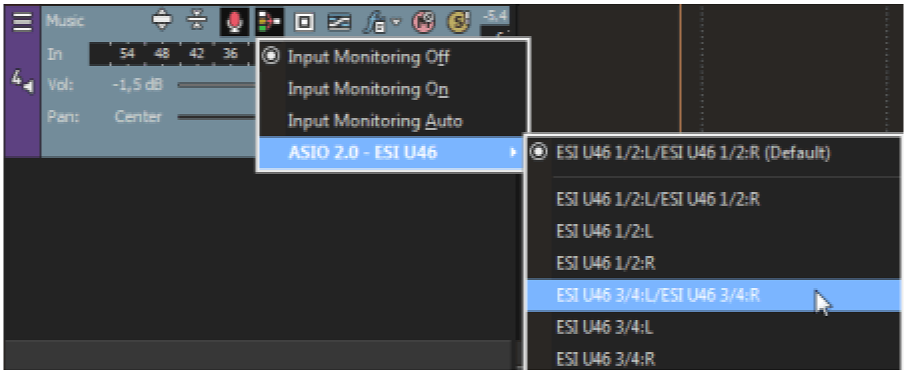
8. Click DONE to close the Recorded Files dialog.

   The last take recorded is set as the active take for the event. For more information, see [Using takes as alternate versions of events]

> **TIP** When performing punch-in recording, recording occurs underneath the pre- and post-roll. If your subject starts early, for example, you can adjust the event to uncover the recording. Hold Ctrl+Alt while dragging the crossfaded area to slip the crossfade in either direction. For more information, see [Adjusting an event's length] and [Slipping and sliding events]

Changing the recording device and attributes for recording audio

The RECORD INPUT button in a track header chooses the audio input that will be used to record to a track and allows you to configure input monitoring.


Music
In
54
48
42
36
Vol:
-1,5 dB
Pan:
Center
-5,4
Input Monitoring Off
Input Monitoring On
Input Monitoring Auto
ASIO 2.0 - ESI U46
ESI U46 1/2:L/ESI U46 1/2:R (Default)
ESI U46 1/2:L/ESI U46 1/2:R
ESI U46 1/2:L
ESI U46 1/2:R
ESI U46 3/4:L/ESI U46 3/4:R
ESI U46 3/4:L
ESI U46 3/4:R

To choose your recording input, click the RECORD INPUT button, choose an audio device from the menu, choose MONO or STEREO from the submenu, and then choose an input.

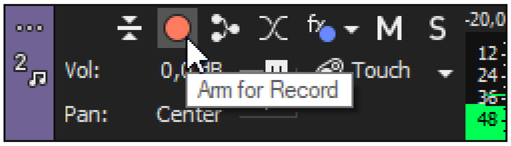
To record from an input bus, click the RECORD INPUT button, choose INPUT BUSSES from the menu, and then choose an input bus from the submenu.

For more information, see Using input busses

Monitoring audio levels

While you're recording, a responsive meter is displayed in the track header to monitor the incoming signal level of the selected recording device. It is important that you record with the highest signal possible without clipping.

When a track is armed, the track meter displays the track's input level. If input monitoring is not on, the meter displays the level of your input source. If input monitoring is turned on, the meter shows the level of the input source plus the track effects chain.



A reading of 0 dB is the maximum for a digital signal. Clipping occurs when the incoming signal is too high to be represented as a digital value. The result is distortion in the recording. A clipped signal will be indicated by a red CLIP warning at the top of the meters.

Right-click the meters and choose a command from the shortcut menu to adjust the display of the meters.

Toggling record input monitoring

If you're using a low-latency audio device, VEGAS Pro can perform record input monitoring so you can hear your recording signal with real-time track effects.

To turn on input monitoring, click the RECORD INPUT button and choose INPUT MONITORING ON or INPUT MONITORING AUTO from the submenu. During recording, your signal will be played back with the current track effects chain, but a dry (unprocessed) signal is recorded.

When INPUT MONITORING AUTO is selected, you will hear the input monitor signal when playback is stopped and during recording. If you're recording into selected events, you'll hear the input monitor signal only when the cursor passes over the selected events.

When INPUT MONITORING ON is selected, the behavior is similar to INPUT MONITORING AUTO mode, but you will always hear the input monitor during recording—monitoring is not toggled on and off when recording in to a selected event.

For more information, see Adding audio effects

> **NOTE** Your ability to monitor effects in real time is dependent on your computer's performance. Effect automation envelopes are bypassed during record monitoring.

Using the metronome

From the Options menu, choose METRONOME before recording.

When you start recording, the metronome will start playing at the tempo specified on the Ruler tab of the Project Properties dialog.

To change the sounds used by the metronome, use the Audio tab in the Preferences dialog.

> **NOTE** The metronome's sound is not mixed in the final rendering of the project.

FURTHER INFORMATION

- Audio Tab
- Setting project properties

5.1 surround projects

Create a 5.1-channel mix to wrap a listener in your remixes or prepare audio for DVD-Video or 5.1-channel music projects.

5.1 surround is a standard audio format consisting of five full-range channels and a low-frequency effects (LFE) channel.

The five full-range channels are reproduced by left, right, and center speakers positioned in front of the listener and left and right surround speakers positioned behind the listener. The LFE channel can be routed to the main speakers or to a subwoofer that can be positioned almost anywhere.

The center channel is typically used to lock dialogue or sounds to a video screen. The LFE channel is generally routed to a subwoofer to enhance low audio frequencies for effects such as explosions or crashes. Audio in this channel is limited to a range of approximately 25 Hz to 120 Hz.

Setting up your 5.1 surround project

Use the Project Properties dialog to set up your project for 5.1 surround.

To preview a 5.1 surround project, you'll need the following hardware:

- A 5.1-compatible sound card.

  —or—
- A sound card with three stereo outputs.

  —or—
- Three stereo sound cards.
- Six powered speakers or six passive speakers with asix-channel amplifier.

Setting your project to 5.1 surround mode

1. From the File menu, choose PROPERTIES.
2. Select the Audio tab.
3. From the MASTER BUS MODE drop-down list, choose 5.1 SURROUND.
4. Select the ENABLE LOW-PASS FILTER ON LFE checkbox if you want to apply a low-pass filter to each track that is assigned to the LFE channel. Enter a frequency in the CUTOFF FREQUENCY FOR LOW-PASS FILTER box to set the frequency above which audio will be ignored by the LFE channel.

   Applying a low-pass filter approximates the bass-management system in a 5.1 decoder and ensures that you're sending only low-frequency audio to the LFE channel.
5. Click OK.

   The track headers and Master Bus window switch to 5.1 surround mode.

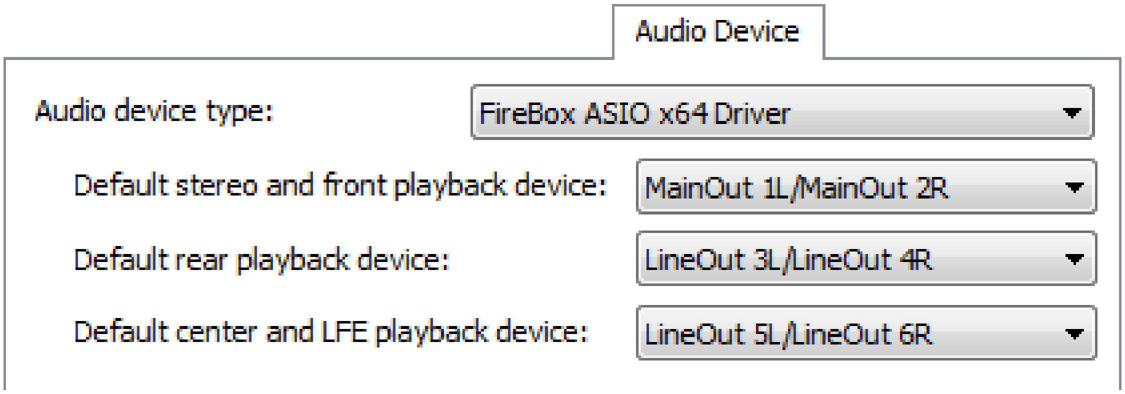
Routing the master bus outputs

When you're working in 5.1 surround mode, you'll need to indicate where to send the output from your 5.1-channel mix.

Setting your default routing

Use the Audio Device tab of the Preferences dialog to set default routing for 5.1 surround projects. For more information, see Audio Device Tab

1. From the Options menu, choose PREFERENCES. The Preferences dialog is displayed.
2. Select the Audio Device tab.



Audio device type: FireBox ASIO x64 Driver

Default stereo and front playback device: MainOut 1L/MainOut 2R

Default rear playback device: LineOut 3L/LineOut 4R

Default center and LFE playback device: LineOut 5L/LineOut 6R

3. Choose a device from the AUDIO DEVICE TYPE drop-down list. Choose a device type other than the Microsoft Sound Mapper if you want to choose specific devices for playing each of the three stereo pairs.

   > **NOTE** Please refer to your sound card's documentationto determine the type of driver you need to use for surround output.

4. From the DEFAULT STEREO AND FRONT PLAYBACK DEVICE drop-down list, choose the device where your front speakers are connected.
5. From the DEFAULT REAR PLAYBACK DEVICE drop-down list, choose the device where your rear speakers are connected.
6. From the DEFAULT CENTER AND LFE PLAYBACK DEVICE drop-down list, choose the device where your center speaker and subwoofer are connected.

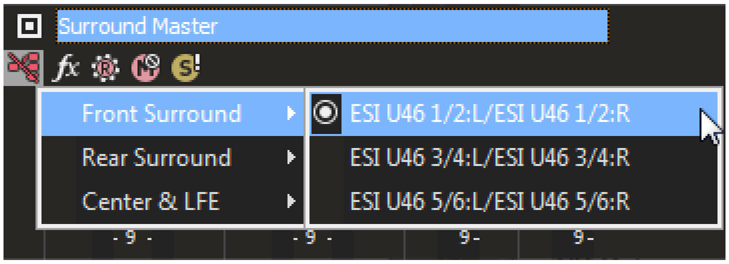
Overriding default device routing

You can override the default device routing at any time using the AUDIO DEVICE SELECTOR button on the Surround Master control.

> **NOTE** Please refer to your sound card's documentation to determine the type of driver you need to use for surround output.

1. Open the Master Bus window.

2. Click the AUDIO DEVICE SELECTOR button, choose a channel from the menu, and choose an output device from the submenu.


Surround Master
Front Surround
Rear Surround
Center & LFE
ESI U46 1/2:L/ESI U46 1/2:R
ESI U46 3/4:L/ESI U46 3/4:R
ESI U46 5/6:L/ESI U46 5/6:R

3. Repeat step 2 for each pair of channels.

Connecting your amplifier and speakers

Using a 5.1-compatible sound card

- Connect powered speakers to your sound card's outputs as indicated by your sound card's documentation.
- Connect your sound card's front, rear, and center/subwoofer outputs to the appropriate inputs on a 6-channel amplifier/home theater receiver. Connect front, rear, center, and LFE speakers to the amplifier.

Using a sound card with three stereo outputs

- Connect powered speakers to your sound card's outputs where you have routed each of the pairs of channels. The left channel of the Center/LFE pair is the center channel; the right channel is the LFE channel.
- Connect your sound card's outputs to the appropriate inputs on a 6-channel amplifier/home theater receiver. Connect front, rear, center, and LFE speakers to the amplifier.

> **NOTE** The audio cables you'll need will depend on your specific hardware. For a typical application, you'll need three cables: each will have a 3.5 mm stereo plug on one end and dual RCA connectors on the other.

Using three stereo sound cards

- Connect powered speakers to your sound cards' outputs where you have routed each of the pairs of channels. The left channel of the Center/LFE pair is the center channel; the right channel is the LFE channel.
- Connect your sound cards' outputs to the appropriate inputs on a 6-channel amplifier/home theater receiver. Connect front, rear, center, and LFE speakers to the amplifier.

IMPORTANT Multiple sound card setups may not work with ASIO drivers. You can only use a single ASIO driver at a time, and some ASIO drivers can conflict with other audio driver models (such as WDM and wave drivers).

NOTE The audio cables you'll need will depend on your specific hardware. For a typical application, you'll need three cables: each will have a 3.5 mm stereo plug on one end and dual RCA connectors on the other.

5.1 surround panning and mixing

After you've set up your project for 5.1 surround mixing, the track headers and Mixing Console switch to 5.1 surround mode, and you're ready to start panning.

Choose VIEW | WINDOW | SURROUND PANNER to toggle the display of the Surround Panner window. Use the Surround Panner window to pan tracks, busses, and assignable effects chains.

If you have a joystick, you can use it to control surround panning. A force-feedback joystick such as the Microsoft® SideWinder® Force Feedback 2 joystick can add a tactile element to your editing sessions.

NOTE Only the Surround Master bus accepts 5.1 channel inputs. If you assign a track to another bus, the Mixing Console will send a stereo output to the bus, and you can perform surround panning at the bus level.

> **TIP** When you apply effects to a 5.1 surround project, you can use distinct plug-in settings for each channel (separate EQ settings for the front and surround speakers, for example) using effect automation. Add multiple instances of the plug-in to the track effects chain and select the ENABLE check boxes in the FX Automation Chooser for the channels you want each instance of the plug-in to affect.

> **IMPORTANT** Surround panning is not available for tracks or busses that are routed to a hardware output.

FURTHER INFORMATION

Using a joystick for panning, adjusting controls, and color correction

Automating audio effect parameters

Muting or soloing channels

Muting a channel ensures that no audio will be played through that channel. For example, you could mute the center channel if you want to produce a stereo image at the center listening position, or you might want to solo the center channel when you're working with dialogue.

1. Double-click the surround panner on the track or bus you want to pan. The Surround Panner window is displayed.
2. Click the speaker icons to mute or include channels.

   > **TIP** Hold Ctrl while clicking a speaker icon to solo the channel.

Adjusting volume and send levels

Adjusting track volume

You can adjust track volume using the VOL fader in the track header the same way you do in stereo projects.

The fader in the track header can function as a trim control that adjusts the overall volume of the track, or it can adjust track volume automation settings.

The trim level is added to the volume automation settings so your envelope is preserved, but with a boost or cut applied. For example, setting the trim control to -3 dB has the same effect as decreasing every envelope point by 3 dB.

Deselect the AUTOMATION SETTINGS button in the track header if you want to adjust trim levels, or select the button if you want to adjust volume automation.

Adjusting assignable effects send or bus send levels

You can adjust send levels for busses or assignable effects chains using the multipurpose fader in the track header the same way you do in stereo projects. Click the fader label and choose an assignable effects chain or bus from the menu. The fader in the track header can function as a trim control that adjusts the overall send level of the track, or it can adjust send level automation settings.

Deselect the AUTOMATION SETTINGS button in the track header if you want to adjust trim levels, or select the button if you want to adjust volume automation.

Adjusting channel levels

Use the Surround Master bus control in the Master Bus window to adjust the individual levels of the 5.1 channels. The faders in the Surround Master bus control can function as trim controls that adjust the overall level of each channel, or you can automate the master volume of the Surround Master bus (individual channel levels cannot be automated).

Deselect the AUTOMATION SETTINGS button in the track header if you want to adjust trim levels, or select the button if you want to adjust volume automation.

Adjusting the center channel volume

Adjusting the volume of the center channel can help emphasize dialogue or balance the mix. You can adjust the center channel volume trim level or automation settings.

The trim level is added to surround panning keyframes so your keyframe settings are preserved, but with a boost or cut applied. For example, setting the trim control to -3 dB has the same effect as decreasing the center channel level by 3 dB in every keyframe.

Adjusting the center channel trim level

1. Deselect the AUTOMATION SETTINGS button on the track or bus you want to adjust.
2. Double-click the surround panner on the track. The Surround Panner window is displayed.
3. Drag the CENTER fader to boost or attenuate the volume of the center channel. When the fader is set to 0.0 dB, no gain is applied.

> **NOTE** The CENTER fader is not displayed if the center channel is muted. Click the centerchannel icon to unmute the channel.

Automating the center channel level with keyframes

1. Select the AUTOMATION SETTINGS button on the track or bus you want to adjust.
2. Double-click the surround panner on the track. The Surround Panner window is displayed.
3. Select a keyframe to adjust its center channel level or click to position the cursor where you want to create a new keyframe.
4. Drag the CENTER fader to boost or attenuate the volume of the center channel. When the fader is set to 0.0 dB, no gain is applied. The fader thumb is displayed as a in automation mode.

> **NOTE** The CENTER fader is not displayed if the center channel is muted. Click the centerchannel icon to unmute the channel.

Panning a track or bus

You can perform surround panning in two ways:

- Pan tracks individually using the Surround Panner window.
- Route tracks to channel strips in the Mixing Console (busses or assignable effect chains) and pan the channel strips using the Surround Panner window. From the View menu, choose SHOW BUS TRACKS to display bus tracks at the bottom of the track view.

  When a track is routed to a bus other than the surround master, you can use the PAN slider on the track header to adjust the stereo track's contribution to the surround panner on the bus.

  For more information, see Assigning tracks to busses

The surround panner can function as a trim control that adjusts the overall panning of the track, or it can adjust track panning automation settings. Click the AUTOMATION SETTINGS button in the track or bus and select AUTOMATION SETTINGS to adjust surround panning keyframes, or deselect the command to adjust trim levels.

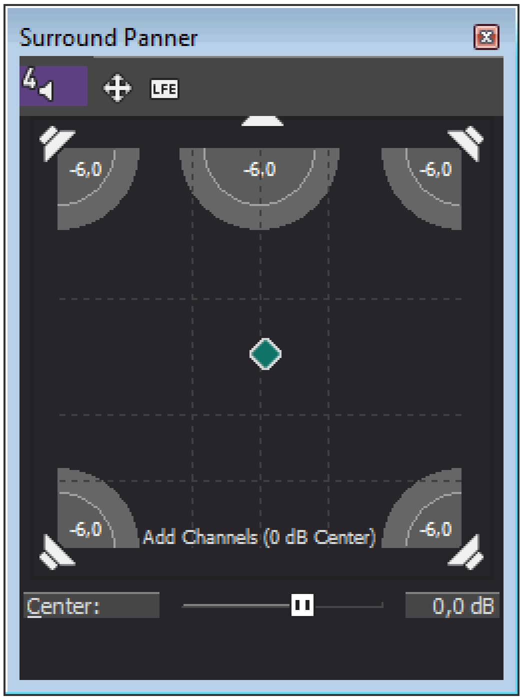
The trim level is added to the pan automation settings so your keyframes are preserved, but with a boost or cut applied. For example, setting the trim control to -9% left has the same effect as moving every keyframe 9% to the left.

> **IMPORTANT** Panning controls can adjust automation (dynamic) settings, or they can function as trim (nonautomated) controls. If your automation is not behaving as expected, you may have applied a trim value that is offsetting your automation settings.

When the surround panner is set to adjust trim levels, it is displayed as a ◆. When it is set to adjust automation levels, it is displayed as a ✹.

Adjusting panning trim levels

1. Deselect the AUTOMATION SETTINGS button in the track or bus.
2. Double-click the surround panner on the track or bus to display the Surround Panner window:

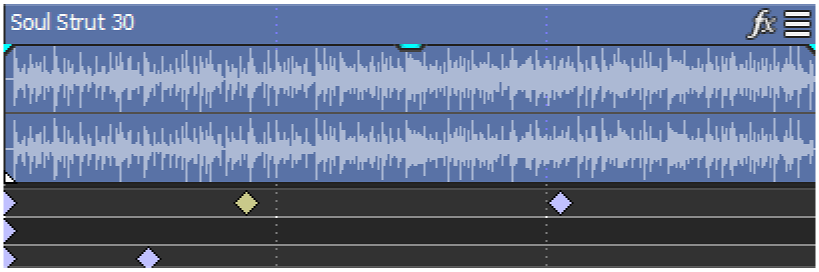


3. Drag the pan point in the Surround Panner window to position the sound within the sound field. Shading is drawn to indicate the output from each channel.
   - Double-click the pan point to reset it to the front-center listening position.
   - Double-click in the Surround Panner window to move the pan point to the point you click.
   - To constrain the motion of the pan point, click the ✥ button to toggle through MOVE FREELY ✥, MOVE LEFT/RIGHT ONLY ↔ and MOVE FRONT/BACK ONLY ↕ modes.

> **TIP** You can also use the track surround panner in the track header to pan your track. Keyboard and mouse shortcuts can help you position the pan point quickly and accurately. For more information, see Keyboard shortcuts

Automating panning with keyframes

You can automate panning by adding keyframes. Keyframes are similar to envelope points in that they mark specific locations in the track where settings change. However, unlike envelope points, keyframes are displayed below a track:



> **NOTE**
> - Use bus tracks to add panning keyframes to busses. From the View menu, choose SHOW BUS TRACKS to display bus tracks at the bottom of the track view. For more information, see Audio bus tracks
> - Center-channel gain cannot be automated.
> - Muting and soloing channels cannot be automated.

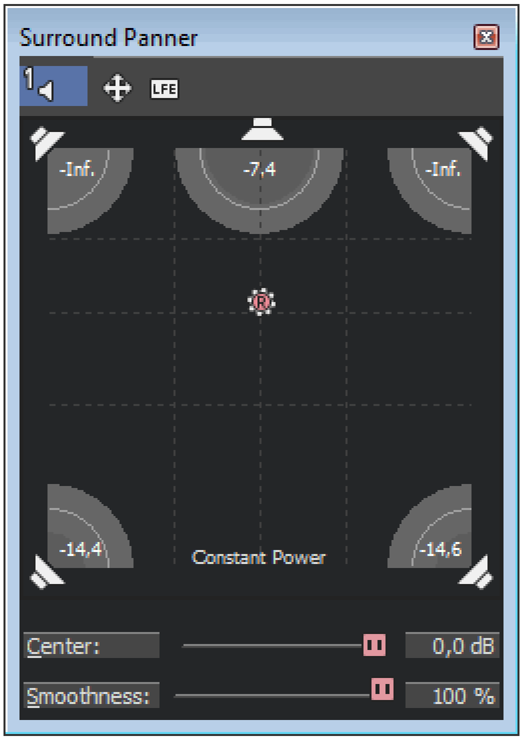
1. Select the track (or bus track) you want to pan.
2. Select the AUTOMATION SETTINGS button in the track or bus.
3. From the Insert menu, choose AUDIO ENVELOPES, and then choose SURROUND PAN KEYFRAMES from the submenu. An additional row appears below the track with a single keyframe positioned at the beginning of the project. This keyframe represents the current panning settings for the track.

> **TIP** To hide panning keyframes without removing them from your project, choose SHOW AUDIO ENVELOPES from the View menu, and then choose SURROUND PAN KEYFRAMES from the submenu.

4. Click to position the cursor where you want to begin panning the track.

5. Pan your track:

   a. Double-click the surround panner on the track or bus to display the Surround Panner window:



Center: 0,0 dB

Smoothness: 100 %

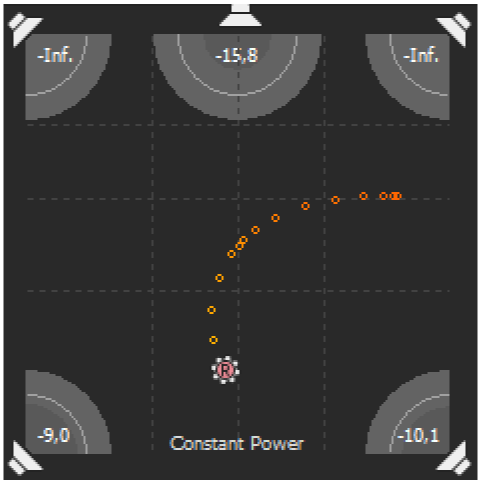
   b. Drag the pan point in the Surround Panner window to position the sound within the sound field. Shading is drawn to indicate the output from each channel, and a keyframe is added below the track.

      - Double-click the pan point to reset it to the front-center listening position.
      - Double-click in the Surround Panner window to move the pan point to the point you click.

- To constrain the motion of the pan point, click the ✥ button to toggle through MOVE FREELY ✥, MOVE LEFT/RIGHT ONLY ↔ and MOVE FRONT/BACK ONLY ↕ modes.

> **TIP** You can also use the surround panner in the track header to pan your track. Keyboard and mouse shortcuts can help you position the pan point quickly and accurately. For more information, see [Keyboard shortcuts](#)

6. Repeat steps 4 and 5 to add as many panning keyframes as necessary. The Surround Panner window draws the panning path:



7. If you have two or more keyframes, you can drag the SMOOTHNESS slider to adjust the interpolation curve between them. Adjusting the curve affects perceived motion of sound within the sound field: a setting of 0 produces linear motion from one keyframe to the next. Increasing the setting produces a curved path.

   If you want to adjust temporal interpolation how the pan occurs over time right-click a keyframe and choose a new keyframe type from the shortcut menu.

Adjusting panning keyframes

If you automated panning for a track or bus, a keyframe is displayed in the timeline (directly below the track) for each pan setting. You can move, copy, and change fade types from the timeline.

> **IMPORTANT**
> Panning controls can adjust automation (dynamic) settings, or they can function as trim (nonautomated) controls. If your automation is not behaving as expected, you may have applied a trim value that is offsetting your automation settings.
>
> When the surround panner is set to adjust trim levels, it is displayed as a ◆. When it is set to adjust automation levels, it is displayed as a ✹.

Editing a keyframe

1. Double-click a keyframe to open the Surround Panner window.
2. Drag the pan point to position the sound within the sound field.
3. Adjust the SMOOTHNESS slider as necessary to adjust the curve between keyframes.

> **TIP** You can also edit a keyframe by selecting the keyframe and dragging the pan point in the track or bus surround panner.

Adding keyframes

Double-click in the keyframe bar to add a keyframe to the timeline. The new keyframe will use the same settings and interpolation curve as the previous keyframe.

Deleting keyframes

Right-click a keyframe and choose DELETE from the shortcut menu.

Moving keyframes

Drag the keyframe to a new position on the timeline.

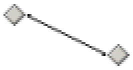
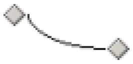
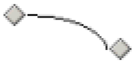
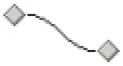
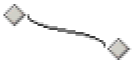
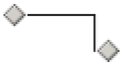
Copy keyframes

Hold Ctrl while dragging a keyframe to copy it.

Change the fade curve between keyframes

If you want to adjust temporal interpolation—how the pan occurs over time—right-click a keyframe and choose a new keyframe type from the shortcut menu.

If you want to adjust the perceived motion of sound within the sound field, drag the SMOOTHNESS slider to adjust the interpolation curve between keyframes. a SMOOTHNESS setting of 0 simulates linear motion from one keyframe to the next. Increasing the setting produces a curved path.

Command	Description	Looks Like
LINEAR ◆	Panning is interpolated in a linear path.	
FAST ◆	Panning is interpolated in a fast logarithmic path.	
SLOW ◆	Panning is interpolated in a slow logarithmic path.	
SMOOTH ◆	Panning is interpolated along a smooth, natural curve.	
SHARP ◆	Panning is interpolated along a sharp curve.	
HOLD ◆	No interpolation will take place. The keyframe's settings will be maintained until the next keyframe.	

Routing audio to the low-frequency effects (LFE) channel

Perform either of the following actions to send audio to the low-frequency effects (LFE) channel:

- Click the LFE button in the Surround Panner window to switch to LFE mode.
- Right-click the surround panner on the track or Mixing Console channel strip and choose LFE ONLY from the shortcut menu.

To return to normal surround panning, click the LFE button in the Surround Panner window again or right-click the surround panner and choose SURROUND PAN from the shortcut menu.

TIP Select the ENABLE LOW-PASS FILTER ON LFE checkbox on the Audio tab of the Project Properties dialog if you want to apply a low-pass filter to each track or bus that is assigned to the LFE channel. Enter a frequency in the CUTOFF FREQUENCY FOR LOW-PASS FILTER box to set the frequency above which audio will be ignored by the LFE channel, and choose a setting from the LOW-PASS FILTER QUALITY drop-down list to determine the sharpness of filter's rolloff curve. BEST produces the sharpest curve. For more information, see Setting project properties

NOTE Applying a low-pass filter approximates the bass-management system in a 5.1 decoder and ensures that you're sending only low-frequency audio to the LFE channel.

IMPORTANT Before rendering your surround project, check your surround authoring application's documentation to determine its required audio format. Some encoders require a specific low-pass filter cutoff frequency and rolloff, and your encoder may require that no filter be applied before encoding.

Changing the pan mode

Right-click within the Surround Panner window (or right-click a surround panner on a track or bus), choose PAN TYPE from the shortcut menu, and then choose a pan type from the submenu. For more information about panning modes, see Audio panning modes

NOTE The selected panning mode is also used for surround panning keyframes.

Using the grid to monitor panning

The grid in the Surround Panner window provides a visual indication of how your panning will sound. The grid spacing changes to match the current panning mode.

The vertical lines represent the points where the left-to-right signal ratio is 6 dB, 0 dB, and -6 dB respectively: at the far-left line, the left channel is 6.0 dB louder than the right channel.

The horizontal lines represent the points where the front-to-rear signal ratio is 6 dB, 0 dB, and -6 dB respectively. As you adjust the CENTER fader, the lines will move forward or back to compensate for the center-channel gain.

> **NOTE** The grid assumes that you're using a correctly set-up surround system (matched speakers and ideal positioning). Variations in your monitoring system will cause inconsistencies between the graph and perceived output.

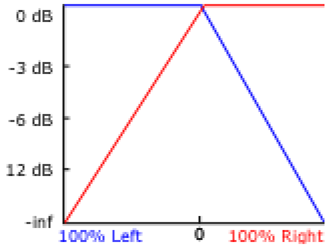
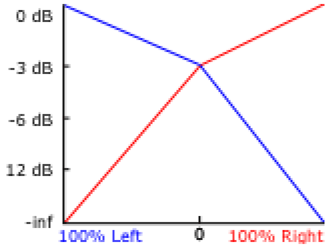
Audio panning modes

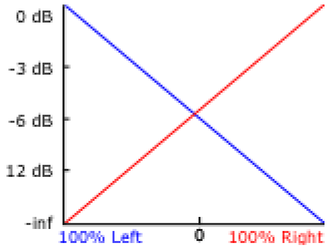
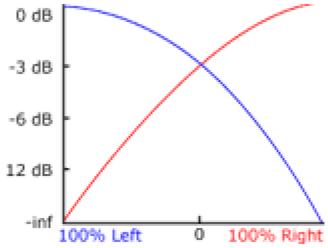
When you pan stereo audio tracks, 5.1 surround tracks, or busses, you can right-click the fader handle (or surround panner) and choose a pan type to change the panning model.

> **TIP** If you want to set the default pan type for new tracks, set a track's pan type, and then use the Set Default Track Properties dialog to set that track's pan type as the default. For more information, see Setting default track properties

> **NOTE** The selected panning mode is also used for track-level pan envelopes. For more information, see Audio track automation

Mode	Description
Add Channels	This mode is most useful for panning stereo files. As you pan across the stereo field, the stereo image appears to move across the speakers. As you pan toward either side, the signal from the opposite channel is added to the channel you are panning toward until at the extreme both channels are sent to a single channel at full volume. This mode uses a linear panning curve. **IMPORTANT** You can introduce clipping when channels are added. Monitor the meters in the Master Bus window and adjust the track volume accordingly.

Mode	Description
Balance (0 dB center) Balance (-3 dB center) Balance (-6 dB center)	In a stereo project, this mode can help you adjust the relative signal levels of the channels in stereo source material. As you pan from the center to either side, the opposite channel begins at the specified center value (0 dB -3 dB, or -6 dB), and decays to -infinity. The signal in the side you are panning toward progresses from the specified center value (0 dB -3 dB, or -6 dB) to 0 dB. This panning mode uses a linear panning curve. For example, when you pan fully right, the right channel is played at 0 dB and the left channel is not audible. As you pan to the center, each channel is attenuated to the specified center value (0 dB -3 dB, or -6 dB). As you pan to the left, the left channel is played at 0 dB, and the right channel is not audible.  With the BALANCE (0 DB CENTER) setting, no gain or cut is applied when you're panned to the center, which can make the center seem louder.  With the BALANCE (-3 DB CENTER) setting, a -3 dB cut is applied when you're panned to the center.

Mode	Description
	 Panning in a 5.1 surround project follows the same rules: as you pan from the center to any channel in a 5.1 surround project, the signal in the channel you are panning toward progresses from the specified center value to 0 dB. The signal in the channel you are panning away from begins at the specified center value and decays to -infinity.
Constant Power	This mode is most useful for panning monaural source material. In this mode, sound will maintain its volume when you pan across channels. If you pan a stereo file 100% R, only the right channel of your media file is played, and this channel is sent to both output channels. If you continue to pan to the left, the left channel is gradually added to the output, and the right channel is gradually faded out until only the left channel will be heard through both output channels when the slider is at 100% L.  If you pan a file fully right midway between the front and rear channels in a 5.1 surround project, only the right channel of your media file is played, and this channel is sent to the right-front and -rear output channels. If you pan to the left, the left channel is gradually added to the output, and the right channel is gradually faded out until only the left channel is sent to the left-front and -rear output channels.

Mode	Description
Film	This mode allows you to pan between pairs of adjacent speakers in 5.1 surround projects using a constant power model. This mode is optimized for theater-style speaker placement. In stereo projects, Film mode functions identically to Constant Power. As you drag the pan point to the center speaker, the sound becomes diffused through the front and rear speakers. When the track is panned fully to the center speaker, there is no output from the front and rear speakers. Dragging the pan point to the center of the surround panner sends the signal to all speakers. **NOTE** If you're panning fully to a single speaker, you may notice that some signal is mixed to the opposite speaker. This is because the ideal placement for surround speakers does not match the representation in the surround panner. For example, panning to the front-left speaker produces a low-level signal in the rear-left speaker. This is because your front-left speaker should be positioned 30° left of center and the speaker in the surround panner is located 45° left of center. To produce a true 45° left-of-center pan, the signal is panned between the front- and rear-left speaker.

Rendering your 5.1 surround project

Rendering a surround project creates six mono files (AIFF, ATRAC, WAV/W64, or PCA) or a single 5.1-channel file (AC-3, WAV/W64, WMA, and WMV) that your authoring application can use to create DVD-Video or 5.1-channel music projects.

> **IMPORTANT** Before rendering your surround project, check your surround authoring application's documentation to determine its required audio format. Some encoders require a specific low-pass filter cutoff frequency and rolloff, and your encoder may require that no filter be applied before encoding. Use the Audio tab of the Project Properties dialog to configure a low-pass filter.

1. From the File menu, choose RENDER AS to display the Render As dialog.
2. In the FOLDER box, choose the folder and file name you want to use to save your file.
3. Use the NAME box to give the file a name.
4. In the TEMPLATES box, choose the multiple mono template, or choose an appropriate 5.1-channel template if the selected file type supports it.

> **TIP**
>
> - When you render a 5.1 surround project to AIFF (.aif), Perfect Clarity Audio (.pca), Wave64 (.w64), or Wave (.wav) formats, you can save each of the surround master busses to a separate file by choosing the multiple mono setting from the TEMPLATE drop-down list. For example, if you'd typed My Film.wav in the FILE NAME box, the following files would be rendered: My Film Right.wav, My Film Right Surround.wav, My Film LFE.wav, My Film Left.wav, My Film Left Surround.wav, and My Film Center.wav. For more information, see [5.1 surround projects]()
> - When you render a 5.1 surround project to WAV or WAV64 format using the 48,000 HZ, 16 BIT, 5.1, PCM or 48,000 HZ, 32 BIT, 5.1, PCM template, you can create a single 5.1 channel file. The rendered file contains channel-mapping information so that VEGAS Pro will preserve surround panning information when adding these files to 5.1 surround projects.
>
>   Legacy Vegas applications (and third-party applications) may not be able to read these 5.1-channel files. In this case, you can render a single six-channel file by selecting the ENABLE MULTICHANNEL MAPPING checkbox and creating a channel mapping using the Surround Master outputs.
>
>   For more information about rendering multichannel audio and setting up multichannel mapping, please see [Rendering Multichannel Audio Files]()

5. Select the RENDER LOOP REGION ONLY checkbox if you want to save only the portion of the project that is contained within the Loop Region. LOOP PLAYBACK does not need to be selected for this option to work.

   The checkbox is available only if you've created a time selection in the timeline.

6. If the selected file type supports it, you can select the SAVE PROJECT MARKERS WITH MEDIA FILE checkbox to include markers, regions, and command markers in the rendered media file. If the information cannot be saved in your media file, it will create an .sfl file (using the same base name as your media file).

7. Click the RENDER button. A dialog is displayed to show rendering progress.

   When rendering is complete, click the OPEN button to play the file with its associated player, or click OPEN FOLDER to open the folder where you saved the file.

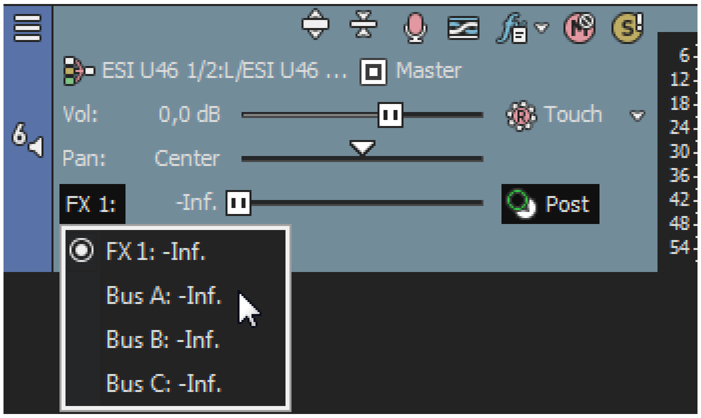
Mixing audio

You can mix your audio tracks in three ways in VEGAS® Pro:

- The audio track controls in the track list allow you to adjust relative track volumes, panning, assignable FX send levels, and bus send levels for individual tracks.
- The Master Bus window allows you to adjust the overall level of your project.
- The Mixing Console window allows for advanced multichannel mixing using multiple busses and assignable effects using a traditional hardware-style mixer view.

Audio track controls

The controls in the track list allow you to adjust track volume, panning, phase, assignable FX send levels, and bus send levels.



TIP

- Audio track controls are duplicated on audio track channel strips in the Mixing Console window. Audio Track Channel Strips
- To move faders and sliders in fine increments, hold Ctrl while dragging the control.

NOTE If you cannot find a trace control mentioned here, it's probably hidden. Click the More button ··· to specify which track control should be visible in the track header.

Changing a track's color

You can change the color of your tracks to create logical track groups.

To change a track's color, right-click the header and choose TRACK DISPLAY COLOR from the shortcut menu. Choose a color from the submenu to change the icon in the track list and the waveform in the timeline.

Use the Display tab in the Preferences dialog to edit the available colors. For more information, see Display Tab

Changing a track's height

Drag a track's bottom border to set its height. If you want to set a track's height as the default height for new tracks, you can right-click within the track list and choose SET DEFAULT TRACK PROPERTIES from the shortcut menu. For more information, see Setting default track properties

Click MINIMIZE to minimize a track vertically.

Click MAXIMIZE to zoom in vertically so a track fills the timeline.

After minimizing or maximizing a track, click the MINIMIZE or MAXIMIZE button again to return a track to its previous height.

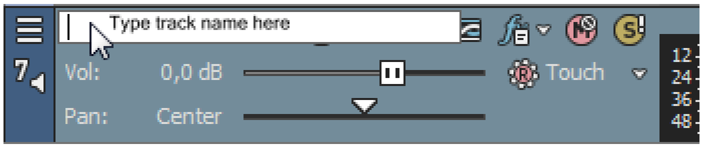
Track height keyboard shortcuts

- Press Ctrl+Shift+Up Arrow or Down Arrow to change the height of all tracks at once.
- Press ` to minimize all tracks. Press again to restore tracks to their previous height. When restoring track height, tracks that you previously minimized are not restored—you can restore these tracks by clicking the RESTORE TRACK HEIGHT button on the track header.
- Press Ctrl+` to return all tracks to the default height.

Assigning a name to a track

1. Double-click in the Scribble Strip and type the track name.

   If you do not see the Scribble Strip, expand the track to reveal it. The Scribble Strip appears above the VOLUME fader.



Vol: 0,0 dB

Pan: Center

2. Press Enter to save the name.

Arming a track for recording

Click the ARM FOR RECORD button on an audio track to prepare it for recording.

When you click the RECORD button on the main transport bar, all armed tracks will begin recording.

For more information about recording audio, see [Recording audio]

Inverting the phase of a track

Click the INVERT TRACK PHASE button to reverse the phase of all events on an audio track.

Although inverting data does not make an audible difference in a single file, it can prevent phase cancellation when mixing or crossfading audio signals.

Select multiple tracks to invert several tracks simultaneously.

> **NOTE** If the INVERT event switch is selected, inverting the phase of the track will return the event to its original phase.

Adding or editing track effects

Click the TRACK FX button to add effects to a track or edit the existing effects chain.

For more information about using track effects, see Adding audio effects

Muting a track

Click the MUTE button to prevent a track from being played in the mix. Click the MUTE button on additional tracks to add them to the mute group. To unmute a track, click the MUTE button again.

Click the MUTE button in a track group header to temporarily suspend playback of all tracks in the group. Muting a track group overrides soloed tracks in the group.

> **NOTE** Muting a track mutes its main output and post-fader sends only unless the TRACK PREFADER SENDS LISTEN TO MUTE checkbox on the Audio tab of the Preferences dialog is selected. For more information and examples about how the TRACK PREFADER SENDS LISTEN TO MUTE checkbox works, see Audio Tab

Muting or unmuting a track

1. Deselect the AUTOMATION SETTINGS button.
2. Click the MUTE button.

> **TIP** When you have a group of tracks muted, hold Ctrl while clicking the MUTE button on an unmuted track to remove all other tracks from the mute group. Hold Ctrl while clicking the MUTE button on a muted track to reset all MUTE buttons.

Adjusting mute automation

When you select the AUTOMATION SETTINGS button , the MUTE button is displayed as , and you can use the button to edit mute automation.

Soloing a track

Click the SOLO button to mute all unselected tracks. Click the SOLO button on additional tracks to add them to the solo group. To remove a track from the solo group, click its SOLO button again.

Click the SOLO button in a track group header to isolate all tracks in the group for playback. Soloing a track group overrides muted tracks in the group.

> **TIP** Hold Ctrl while clicking a SOLO button to solo a single track and remove all other tracks from the solo group.

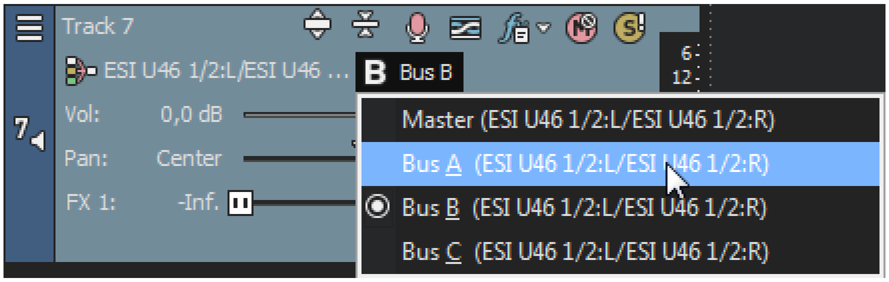
Choosing a track's input/recording device

The RECORD INPUT button in a track header chooses the audio input that will be used to record to a track.

You can click the RECORD INPUT button to turn input monitoring on or off and choose a recording device.

Assigning a track to a bus

The bus button in a track header chooses the track's primary output. Assigning tracks to busses is especially useful for creating submixes that allow you to adjust the levels of multiple tracks at once or apply an effect to multiple tracks. For more information, see Creating a cue (headphone) mix with the Mixing Console


Track 7
7
ESI U46 1/2:L/ESI U46 ...
B Bus B
6
12
Vol: 0,0 dB
Pan: Center
FX 1: -Inf.
Master (ESI U46 1/2:L/ESI U46 1/2:R)
Bus A (ESI U46 1/2:L/ESI U46 1/2:R)
Bus B (ESI U46 1/2:L/ESI U46 1/2:R)
Bus C (ESI U46 1/2:L/ESI U46 1/2:R)

1. Click the bus button on the track.

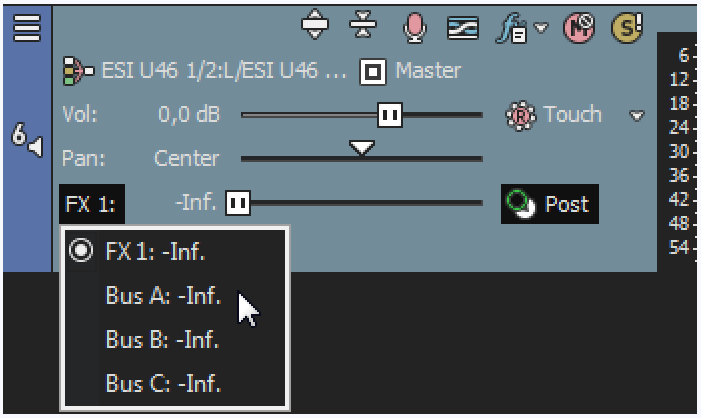
   The button is displayed as a ⊡ when the track is routed to the master bus, and the bus letter is displayed (A, B, and so on) when a track is routed to another bus.

2. Select the desired bus from the submenu. The BUS button changes to display the selected bus.

NOTE If the BUS button does not appear on the track, then you have not specified more than one bus in your project settings. For more information on specifying the number of busses for your project, see Adding audio busses

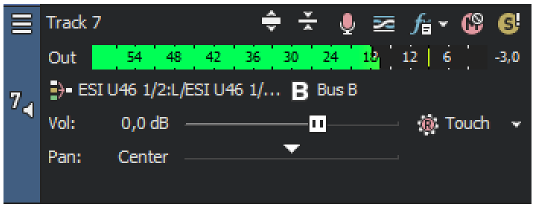
TIP

If you want to send a track to multiple outputs — for creating cue mixes or effects sends — you can use the multipurpose fader to control the level of the track sent to each bus or assignable effects chain. Creating a cue (headphone) mix with the Mixing Console and Using assignable effects


6
ESI U46 1/2:L/ESI U46 ...
Master
Vol: 0,0 dB
Touch
Pan: Center
FX 1: -Inf.
Post
6
12
18
24
30
36
42
48
54
FX 1: -Inf.
Bus A: -Inf.
Bus B: -Inf.
Bus C: -Inf.

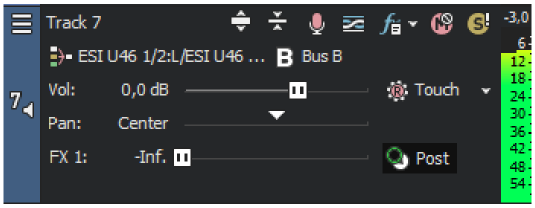
Monitoring track output levels

During playback, a responsive meter is displayed in the track header to monitor the track's output.



Vol: 0,0 dB
Pan: Center

Horizontal meters



Vol: 0,0 dB
Pan: Center
FX 1: -Inf.

Vertical meters

When clipping is detected, the peak meter displays a red CLIP indicator.

Right-click the meters and choose a command from the shortcut menu to adjust the display of the meters. This shortcut menu allows you to reset clip indicators, choose a display scale, toggle vertical display, or turn output meters off.

Adjusting a track's volume

The fader in the track header can function as a trim control that adjusts the overall volume of the track, or it can adjust track volume automation settings.

The trim level is added to the volume automation settings so your envelope is preserved, but with a boost or cut applied. For example, setting the trim control to -3 dB has the same effect as decreasing every envelope point by 3 dB.

> **TIP** When adjusting the mix of your tracks, remember to look at the meters on the Master Bus. Because you are adding the volumes of all of the tracks together, it is easy to clip the audio output. Make sure that the meters never display the red Clip indication during playback.

Adjusting the volume trim level

1. Deselect the AUTOMATION SETTINGS button.
2. Drag the VOL fader to control how loud a track is in the mix.

   A value of 0 dB means that the track is played with no boost or cut. Dragging the fader to the left cuts the volume; dragging to the right boosts the volume.

   You can hold `Ctrl` while dragging a fader to adjust the setting in finer increments, or double-click the fader to return it to 0 dB.

   If multiple tracks are selected, all selected tracks are adjusted.

Adjusting the volume automation level

When you select the AUTOMATION SETTINGS button, the fader thumb is displayed as a ▣, and you can use the control to edit volume automation. For more information, see [Audio track automation](#)

Panning a track

The PAN slider in the track header can function as a trim control that adjusts the overall panning of the track, or it can adjust track panning automation settings.

The trim level is added to the pan automation settings so your panning envelope is preserved, but with an offset applied. For example, setting the trim control to -9% left has the same effect as moving every envelope point 9% to the left.

Adjusting track panning trim levels

1. Deselect the AUTOMATION SETTINGS button.
2. Drag the PAN slider to control the position of the track in the stereo field: dragging to the left will place the track in the left speaker more than the right, and dragging to the right will place the track in the right speaker.

You can hold Ctrl while dragging the slider to adjust the setting in finer increments, or double-click the slider to return it to 0.

If multiple tracks are selected, all selected tracks are adjusted.

Adjusting the track panning automation level

When you select the AUTOMATION SETTINGS button, the PAN slider handle is displayed as a, and you can use the control to edit pan automation. For more information, see [Audio track automation]()

Changing the pan mode

Right-click the fader handle and choose a pan type to change the behavior of the PAN slider. For more information about pan modes, see [Audio panning modes]()

> **NOTE** The selected panning mode is also used for track-level pan envelopes. For more information, see [Audio track automation]()

Adjusting an assignable effects send level

The multipurpose slider in the track header can function as a trim control that adjusts the overall assignable effects send level of the track, or it can adjust assignable effects send automation settings.

The trim level is added to the assignable effects automation settings so your envelope is preserved, but with a boost or cut applied. For example, setting the trim control to -3 dB has the same effect as decreasing every envelope point by 3 dB.

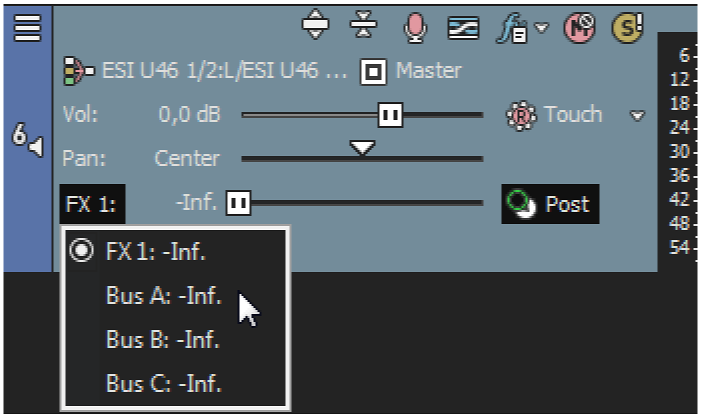
TIP

- FX sends are post-volume by default. To change to pre-volume, click the PRE/POST VOLUME SEND button (or right-click the FX fader and choose PRE VOLUME from the shortcut menu).
- If you want to apply track panning (including pan position and panning mode) to FX sends, right-click the FX fader and choose LINK TO MAIN TRACK PAN from the shortcut menu.

  When LINK TO MAIN TRACK PAN is not selected, the track sends a center-panned stereo signal using the track's current panning mode.
- Select the USE LEGACY TRACK SEND GAIN checkbox on the Audio page of the Preferences dialog if you want to configure audio track sends to behave as they did in VEGAS Pro 7.0 and earlier. When the checkbox is selected, you can open projects created with earlier versions of VEGAS Pro and be assured they will sound the same as they did in earlier versions of VEGAS Pro. For more information, see [Audio Tab](#)

Adjusting the assignable effects trim level

1. Deselect the AUTOMATION SETTINGS button .
2. Click the label on the multipurpose slider and choose an assignable effects chain from the menu.



ESI U46 1/2:L/ESI U46 ... Master
Vol: 0,0 dB Touch
Pan: Center
FX 1: -Inf. Post

3. Drag the FX fader to control the level of the track sent to each of the assignable FX chains that you have created. Dragging the fader to the left cuts the volume; dragging to the right boosts the volume.

   You can hold `Ctrl` while dragging a fader to adjust the setting in finer increments, or double-click the fader to return it to 0 dB.

   If multiple tracks are selected, all selected tracks are adjusted.

Adjusting the assignable effects automation level

When you select the AUTOMATION SETTINGS button , the fader thumb is displayed as a , and you can use the control to edit assignable effects send level automation. For more information, see Audio track automation

Adjusting a bus send level

The multipurpose slider in the track header can function as a trim control that adjusts the overall bus send level of the track, or it can adjust bus send automation settings.

The trim level is added to the bus send automation settings so your envelope is preserved, but with a boost or cut applied. For example, setting the trim control to -3 dB has the same effect as decreasing every envelope point by 3 dB.

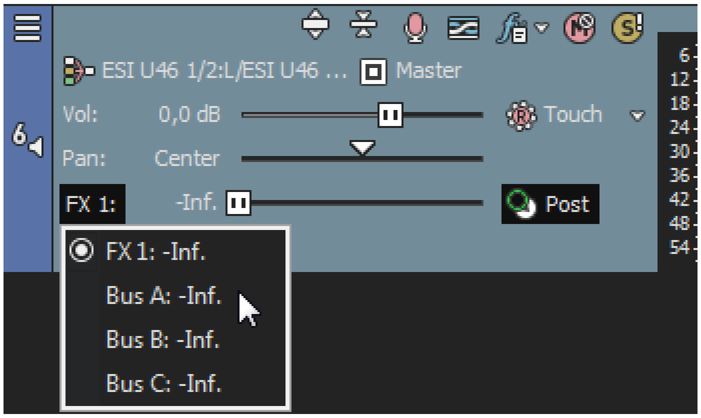
TIP

- Bus sends are pre-volume (and pre-mute) by default. When bus sends are pre-volume, you can create a cue mix that is independent of your main mix (like the monitor out on a hardware mixer).Creating a cue (headphone) mix with the Mixing Console To change to post-volume, click the PRE/POST VOLUME SEND button (or right-click the bus fader and choose POST VOLUME from the shortcut menu. Post-volume sends are useful for effects sends because the send pays attention to the track's volume and mute controls.
- If you want to apply track panning to bus sends (including pan position and panning mode), right click the bus fader and choose LINK TO MAIN TRACK PAN from the shortcut menu.

  When LINK TO MAIN TRACK PAN is not selected, the track sends a center-panned stereo signal using the track's current panning mode.
- Select the USE LEGACY TRACK SEND GAIN checkbox on the Audio page of the Preferences dialog if you want to configure audio track sends to behave as they did in VEGAS Pro 7.0 and earlier. When the checkbox is selected, you can open projects created with earlier versions of VEGAS Pro and be assured they will sound the same as they did in earlier versions of VEGAS Pro. For more information, see Audio Tab

Adjusting the bus send trim level

1. Deselect the AUTOMATION SETTINGS button .
2. Click the label on the multipurpose slider and choose a bus from the menu.



3. Drag the fader to control the level of the track sent to each of the additional busses that you have created for your project. Dragging the fader to the left cuts the volume; dragging to the right boosts the volume.

   You can hold Ctrl while dragging a fader to adjust the setting in finer increments, or double-click the fader to return it to 0 dB.

   If multiple tracks are selected, all selected tracks are adjusted.

Adjusting bus send automation

When you select the AUTOMATION SETTINGS button, the fader thumb is displayed as a, and you can use the control to edit bus send level automation. For more information, see [Audio track automation]

Adjusting trim levels

The controls in the track header can function as trim controls or automation controls for track volume, panning, assignable effects send, and bus send levels. Adjusting the trim control affects the level of the entire track as it did in previous releases of VEGAS Pro.

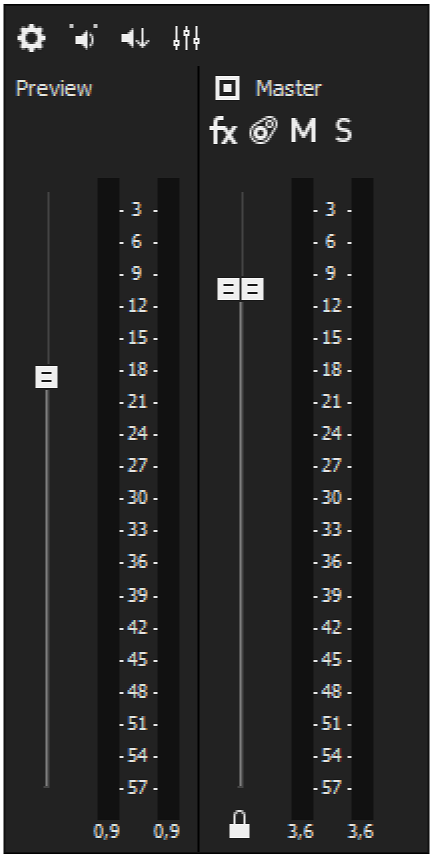
The trim level is added to the track automation setting so your automation settings are preserved, but with a boost or cut applied. For example, setting the trim control to -3 dB has the same effect as decreasing every envelope point by 3 dB.

To adjust trim levels, deselect the AUTOMATION SETTINGS button ⚙. When AUTOMATION SETTINGS is selected, the volume fader and multipurpose slider adjust automation settings.

Using the Master Bus Window

The Master Bus window provides you with a streamlined view of your project's master output.

Choose VIEW | WINDOW | MASTER BUS to toggle the display of the window.


Preview
Master
fx
M
S
3
6
9
12
15
18
21
24
27
30
33
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39
42
45
48
51
54
57
0,9
0,9
3,6
3,6

Master Bus toolbar

Item	Description
Audio Properties	Opens the Audio tab in the Project Properties dialog. For more information, see Setting project properties
Downmix Output	Downmixes your audio from 5.1 surround to stereo or from stereo to mono so you can ensure your mix will sound the way you intended it--even if your audience's hardware has fewer channels than the original mix. The button represents the current playback mode: ● 5.1 surround output ● Stereo output ● Mono output
Dim Output	Attenuates the volume of all busses that are routed to hardware outputs by 20 dB so you can check your mix at a lower level (or answer the phone or hear the pizza-delivery truck). Click again to restore volume and tune out your cantankerous assistant.
Open Mixing Console	Click to open the Mixing Console, which provides an integrated view of all tracks and busses in your project using the appearance of a traditional hardware-based mixer. You can use the Mixing Console to add and control audio tracks, assignable effects chains, busses, and input busses. For more information, see The Mixing Console Window

Preview control

Controls the loudness of media played through the Project Media, Trimmer, or Explorer window.

> **TIP** Right-click in the Master Bus window and choose SHOW PREVIEW FADER to toggle the display of the preview control.

Master Bus control

Use the bus control to adjust levels and panning, add effects, and mute or solo the bus.

Item	Description
MASTER FX	Displays the Plug-In Chooser if there are no plug-ins assigned, or displays the Bus FX window if the bus has an effects chain. **TIP** Right-click the button and choose POST VOLUME from the shortcut menu if you want to apply the effects chain after the bus volume. This has the same effect as right-clicking the bus output fader and choosing Pre FX from the shortcut menu.
AUTOMATION SETTINGS	The controls in the bus control list can function as trim controls or automation controls for bus volume, panning, and muting. Click the button and verify SHOW AUTOMATION CONTROLS is not selected if you want the bus control to function as a trim control. Adjusting a trim control affects the entire track. Click the button and choose SHOW AUTOMATION CONTROLS to adjust automation settings. For more information, see [Using automation]
Mute	Excludes the bus from playback. When SHOW AUTOMATION CONTROLS is selected, the button is displayed as a , and you can use the button to edit mute automation on the bus's bus track.
Solo	Plays only the bus during playback.

Item		Description
	Output Fader	Drag to adjust the volume of the bus. Double-click the center of the thumb to reset the fader to 0.0 dB. If the right and left channels of the Master bus are set differently, you can double-click either thumb to force the other channel to match it. When SHOW AUTOMATION CONTROLS is selected, the thumb is displayed as a ⊟, and you can use the fader to edit volume automation on the bus's bus track. **TIP** Right-click the thumb and choose PRE FX or POST FX from the shortcut menu to specify whether the bus level is applied before or after the bus effects chain.
	Meter	Displays the playback level at the output of the bus. This is the level that will be sent to the selected audio device. Right-click the meter and choose a setting from the shortcut menu to change the resolution.
🔒	Lock/Unlock Fader Channels	Click to lock (gang) the faders so the left and right channels will always move together. Click again to unlock the faders. **NOTE** Hold `Shift` while dragging a fader to temporarily override the current state of the button: if the button is turned off, you can hold `Shift` to drag the faders in locked mode; if the button is selected, hold `Shift` to drag the faders independently.

Busses - overview

You can use to group and mix tracks. The most common uses of busses are for routing tracks and effects outputs to specific hardware outputs or simply to use a bus as a master control for a set of tracks.

For example, if you wanted to control the master level of all your drum tracks to a relative level, you could create a bus and assign all drum tracks to that bus. After your drums are mixed, you can adjust the overall volume of the drum tracks by adjusting the bus volume.

You can also use busses to create channel mappings for rendering multichannel audio files.

For more information, see Rendering Multichannel Audio Files

To see the audio signal flow, see Signal flow diagram

Adding audio busses

From the Insert menu, choose AUDIO BUS (or click the INSERT BUS button in the Mixing Console toolbar) to add a bus to your project.

The number of busses in your project will be determined by several factors, such as the number of outputs that your hardware supports, how you will be using and applying effects throughout your project, or how many audio channels you want to include in a channel mapping for rendering multichannel audio.

By default, all busses are assigned to the Master bus. In this configuration, you can use them for creating subgroups of tracks—for example, you could route all your drum tracks to a bus so you can adjust their levels together without changing their relative levels. However, you can also route busses to hardware outputs so you can use busses for sending tracks to external effects processors or for mixing on an external mixer. For more information, see Routing busses

> **TIP** For more information about submixing, see Creating a cue (headphone) mix with the Mixing Console

Adding a bus

From the Insert menu, choose AUDIO BUS to add a bus to your project. A bus channel strip is added to the Mixing Console window.

You can assign up to 26 busses (plus the Master bus), and you can change the number of busses at any time.

> **TIP** If the Mixing Console window is visible, click the INSERT BUS button in the Mixing Console toolbar.

Renaming a bus

To rename a bus, double-click the label at the bottom of the channel strip and type a new name in the box (or press F2 to rename the selected bus). The channel strip in the Mixing Console is updated when you press Enter.

> **TIP** Delete all characters in a custom bus name to reset a custom bus name to its default.

Deleting a bus

Right-click a bus channel strip in the Mixing Console window and choose DELETE from the shortcut menu, or select a channel strip and press the Delete key.

> **NOTE** When you remove a bus from a project, any tracks assigned to that bus will be reassigned to the previous bus. For example, if you have assigned 4 busses to your project (busses A-D), and later decrease the number of busses by one, the tracks assigned to Bus D will be assigned to Bus C.

Assigning tracks to busses

Assigning tracks to busses allows you to apply settings to a series of tracks or route tracks to a hardware output.

For example, if you wanted to apply the same three effects to several tracks, you could apply the effects to a bus and assign the tracks to that bus. If you wanted to send several tracks to a single hardware output, you could assign the tracks to a bus and then route the bus to a hardware output.

FURTHER INFORMATION

- Using bus effects
- Routing busses

Assigning a track to a bus

1. Click the bus button on the track header.

   The button is displayed as a ▣ when the track is routed to the master bus, and the bus letter is displayed (A, B, and so on) when a track is routed to another bus.

   > **TIP** You can also use the I/O control region on the bus channel stripto set a track's output device.

2. Select the desired bus from the menu. The BUS button changes to display the selected bus.

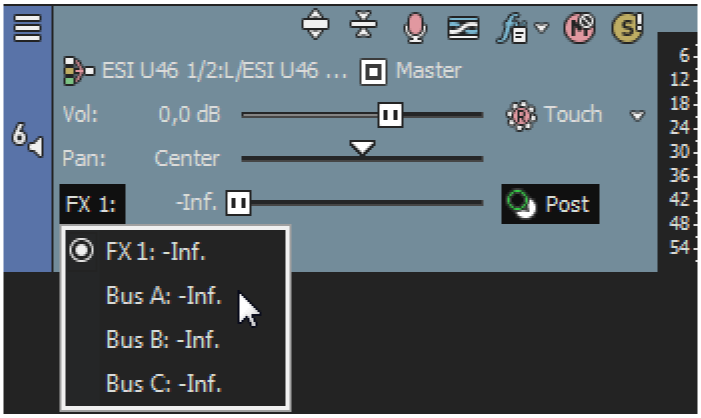
   > **NOTE** If the BUS button does not appear on the track, then you have not specified more than one bus in your project settings.

FURTHER INFORMATION

- Bus Channel Strips
- Adding audio busses

Adjusting a bus send level

1. Click the label on the multipurpose slider and choose the desired bus from the menu. The label changes to reflect the name of the bus.


ESI U46 1/2:L/ESI U46 ...
Master
Vol: 0,0 dB
Touch
Pan: Center
FX 1: -Inf.
Post
FX 1: -Inf.
Bus A: -Inf.
Bus B: -Inf.
Bus C: -Inf.
6
12
18
24
30
36
42
48
54

> **NOTE** If you can't see the multipurpose slider, drag thebottom edge of the track header to increase its height.

2. Drag the fader to adjust the level of the track sent to the bus.

TIP

- You can also use the Sends control region on the bus channel strip to adjust bus send levels.
- Bus sends are pre-volume by default. When bus sends are pre-volume, you can create a cue mix that is independent of your main mix. To change to post-volume, right-click the bus fader and choose POST VOLUME from the shortcutmenu.
- If you want to apply track panning to bus sends (including pan position and panning mode), right click the bus fader and choose LINK TO MAIN TRACK PAN from the shortcut menu.

  When LINK TO MAIN TRACK PAN is not selected, the track sends a center-panned stereo signal using the track's current panning mode.
- Select the USE LEGACY TRACK SEND GAIN checkbox on the Audio page of the Preferences dialog if you want to configure audio track sends to behave as they did in VEGAS Pro 7.0 and earlier. When the checkbox is selected, you can open projects created with earlier versions of VEGAS Pro and be assured they will sound the same as they did in earlier versions of VEGAS Pro.

FURTHER INFORMATION

- Bus Channel Strips
- Creating a cue (headphone) mix with the Mixing Console
- Audio panning modes
- Audio Tab

Using bus envelopes

Bus envelopes allow you to change the level of a track sent to a bus over time.

For more information, see Busses - overview and Audio track automation

Routing busses

The Mixing Console window allows you to create up to 26 (plus the Master) virtual busses that you can route to hardware attached to your computer or to other busses.

By default, all busses are assigned to the Master bus. In this configuration, you can use them for creating subgroups of tracks—for example, you could route all your drum tracks to a bus so you can adjust their levels together without changing their relative levels. When you assign busses to hardware outputs, you can use busses for sending tracks to external effects processors or for mixing on an external mixer.

> **IMPORTANT** When you route busses to hardware outputs, the outputs from those busses will not be included in the mix when you render your project.

Routing a bus to another bus

1. Add busses to your project. For more information, see Adding audio busses
2. Click the PLAYBACK DEVICE SELECTOR button on the audio bus track and choose a bus from the menu. For more information, see Audio bus tracks
    - The button is displayed as a ▣ when a bus is routed to the master bus.
    - The bus letter is displayed (A, B, and so on) when a bus is routed to another bus.
    - The button is displayed as a ⊠ when a bus is routed to a hardware output.

> **NOTE** To prevent feedback, you cannot perform circular routing. For example, if your project has two busses and bus A is routed to B, bus B can only be routed to the Master bus.

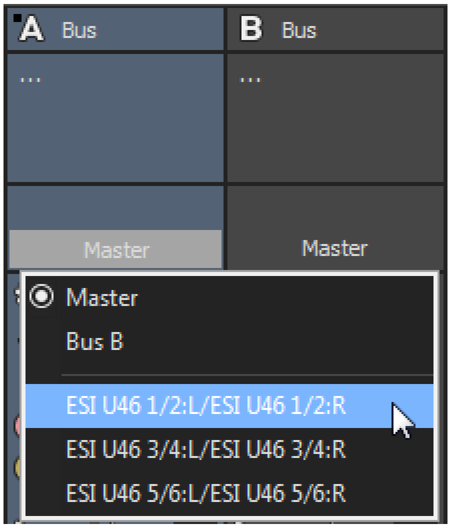
> **TIP** You can also use the I/O control region in the bus channel strip to route busses. For more information, see Bus Channel Strips

Routing a bus to a hardware output

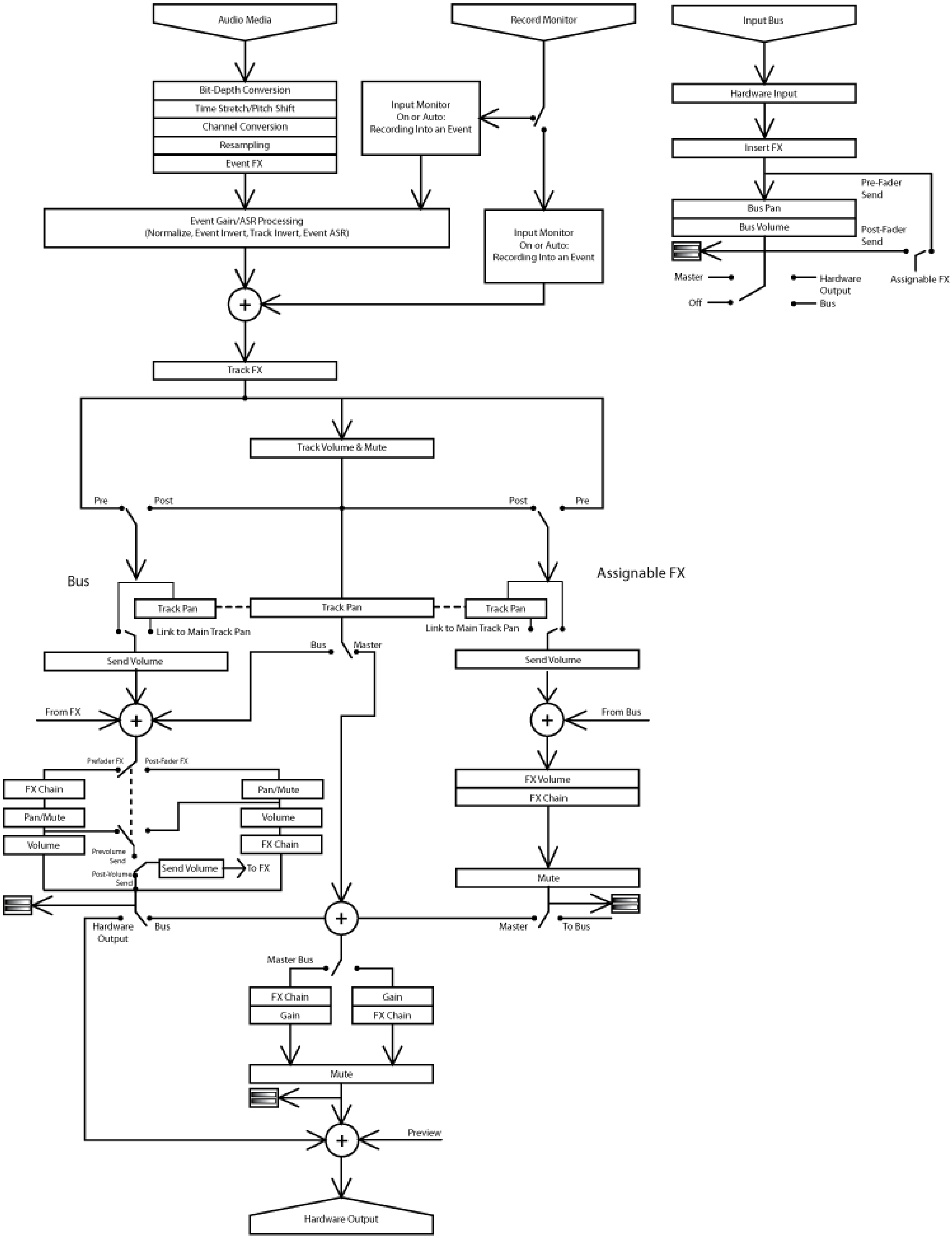
1. Verify that you are using Windows classic wave drivers or an ASIO driver:
   a. From the Options menu, choose Preferences and click the AUDIO DEVICE tab.
   b. From the AUDIO DEVICE TYPE drop-down list, choose WINDOWS CLASSIC WAVE DRIVER or an ASIO driver.
   c. Click OK to close the Preferences dialog.

> **NOTE** If you have selected MICROSOFT SOUND MAPPER in the AUDIO DEVICE TYPE drop-down list on the Audio tab in the Preferences dialog, you will not be able to assign the bus to a different device. For more information, see Audio Tab

2. Click the OUTPUT button in the I/O control region of the bus channel strip and choose another bus from the menu. For more information, see Bus Channel Strips


A Bus
B Bus
...
...
Master
Master
Master
Bus B
ESI U46 1/2:L/ESI U46 1/2:R
ESI U46 3/4:L/ESI U46 3/4:R
ESI U46 5/6:L/ESI U46 5/6:R

Signal flow diagram


Audio Media
Record Monitor
Input Bus
Bit-Depth Conversion
Time Stretch/Pitch Shift
Channel Conversion
Resampling
Event FX
Input Monitor
On or Auto:
Recording Into an Event
Hardware Input
Insert FX
Pre-Fader
Send
Bus Pan
Bus Volume
Post-Fader
Send
Master
Off
Hardware
Output
Bus
Assignable FX
Event Gain/ASR Processing
(Normalize, Event Invert, Track Invert, Event ASR)
Input Monitor
On or Auto:
Recording Into an Event
+
Track FX
Track Volume & Mute
Pre
Post
Post
Pre
Bus
Assignable FX
Track Pan
Track Pan
Track Pan
Link to Main Track Pan
Link to Main Track Pan
Bus
Master
Send Volume
Send Volume
From FX
+
From Bus
+
Prefader FX
Post-Fader FX
FX Chain
Pan/Mute
Volume
Pan/Mute
Volume
FX Chain
FX Volume
FX Chain
Prevolume
Send
Post-Volume
Send
Send Volume
To FX
Mute
Hardware
Output
Bus
+
Master
To Bus
Master Bus
FX Chain
Gain
Gain
FX Chain
Mute
+
Preview
Hardware Output

Using input busses

You can use input busses to input, process, record, and mix external audio sources with your VEGAS Pro project. Following are some examples of how you can use input busses in your projects:

- Use an input bus as a recording input, allowing you to apply effects and record a wet signal.
- Use an input bus as a mixer input for an external device, such as a synthesizer.
- Use an input bus as a return for hardware-based effects.
- Use an input bus to monitor a source such as a talkback microphone.

Adding or deleting input busses

From the Insert menu, choose INPUT BUS (or click the INSERT INPUT BUS button in the Mixing Console toolbar) to add an input bus to your project.

> **NOTE** You can add up to 26 input busses, and you can change the number of busses at any time.

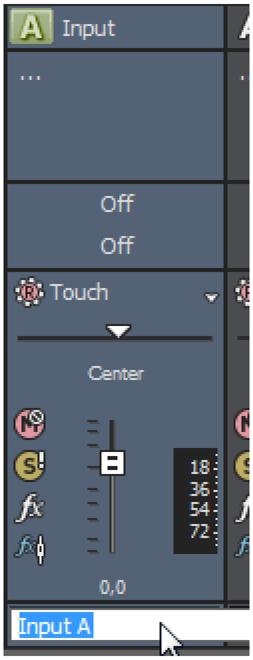
Adding a bus

From the Insert menu, choose INPUT BUS. An input bus channel strip is added to the Mixing Console window. For more information, see Input bus channel strips

> **TIP** If the Mixing Console window is visible, click INSERT INPUT BUS button in the toolbar. For more information, see The Mixing Console Window

Renaming a bus

To rename a bus, double-click the label at the bottom of the channel strip and type a new name in the box (or press F2 to rename the selected bus). The channel strip in the Mixing Console is updated when you press Enter:



> **TIP** Delete all characters in a custom bus name to reset a custom bus name to its default.

Deleting a bus

Right-click an input bus channel strip in the Mixing Console window and choose DELETE from the shortcut menu, or select an input bus channel strip and press the Delete key.

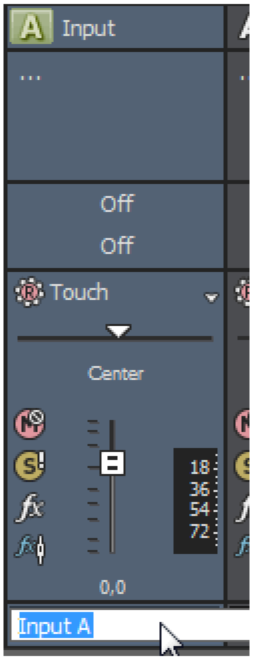
Input bus channel strips

A separate channel strip is displayed for each input bus in your project.

To show or hide channel strips for busses, click the BUSSES button in the View Controls pane. For more information, see [The View Controls Pane]()

Changing a bus's name

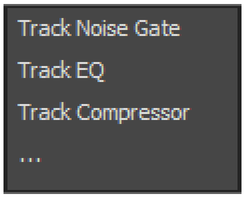
To rename an input bus, double-click the label at the bottom of the channel strip and type a new name in the box (or press F2 to rename the selected bus). The channel strip in the Mixing Console is updated when you press Enter.


A Input
...
Off
Off
Touch
Center
18
36
54
72
0,0
Input A

Adding or editing input bus (insert) effects

When the Insert FX control region is visible, each input bus displays its effects chain at the top of the channel strip.

To show or hide the Insert FX control region, click the INSERT FX button in the View Controls pane.


Track Noise Gate
Track EQ
Track Compressor
...

Each effect is displayed as a button. You can hover over the button to see a ToolTip that displays the full plug-in and preset name.

TIP

- When the Insert FX control region isn't visible, you can click the INPUT BUS FX button *fx* in the Faders control region to display the Audio Plug-In window for the bus effects chain.
- Input bus insert effects are always applied pre-fader.

Adding a plug-in

Click the ... button and then choose a new plug-in from the menu to add a new plug-in to the effects chain.

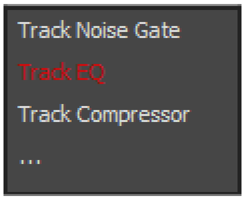
Editing effects settings

Click an effect's button to display the Audio Plug-In window, where you can adjust the plug-in's settings.

When you right-click an effect's button, a shortcut a menu is displayed:

- Choose SHOW <PLUG-IN NAME> to open the Audio Plug-In window, where you can adjust the plug-in's controls.
- Choose BYPASS <PLUG-IN NAME> to temporarily bypass a plug-in.

  When an effect is bypassed, its button is displayed in red text.

  Track Noise Gate
  Track EQ
  Track Compressor
  ...

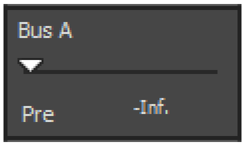
- Choose REMOVE <PLUG-IN NAME> to remove a plug-in from the effects chain.

- Choose PRESETS, and then choose a setting from the submenu to load a new preset. The current preset is indicated by a bullet (•).
- To replace the current plug-in, right-click the effect's button, and then choose a new plug-in from the menu. Plug-ins are organized in submenus by type (EQ, Dynamics, Reverbs, etc.).

Adjusting input bus send levels

When the Sends control region is visible, each bus displays controls you can use to route the input bus to assignable effects chains or to busses that are routed to hardware outputs. A bus cannot send to a bus that is directly or indirectly routed to the Master bus.

To show or hide the Sends control region, click the SENDS button in the View Controls pane.



When the AUTOMATION SETTINGS button in the Faders control region is not selected, click the CHANNEL SEND button and choose a bus or assignable effects chain from the menu, and then drag the fader to adjust the send level.

When the AUTOMATION SETTINGS button in the Faders control region is selected, the fader handle is displayed as a , and you can use it to edit send volume automation on the bus track.

> **NOTE** The trim level is added to the automation settings so your envelope is preserved, but with a boost or cut applied. For example, setting the trim control to -3 dB has the same effect as decreasing every envelope point by 3 dB.

> **TIP** To adjust the size of the Sends control region, you can drag the bottom divider to make more or fewer sends visible.

Bus sends are post-volume (and post-mute) by default. To change to pre-volume (and pre-mute), click the PRE/POST button to switch to PRE-VOLUME SEND mode.

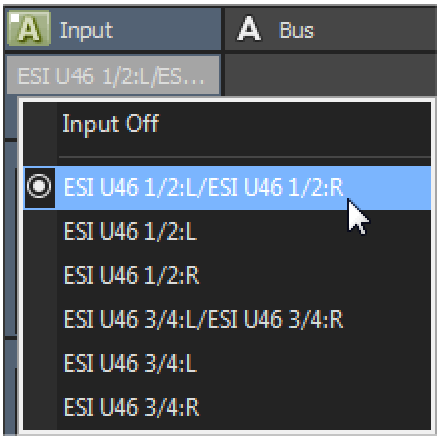
Changing an input bus's input or output port

When the I/O control region is visible, each bus displays controls you can use to set the bus's input and output device.

To show or hide the I/O control region, click the I/O button in the View Controls pane.

Choosing an input device

To choose an output device, click the INPUT button and choose a port from the menu.

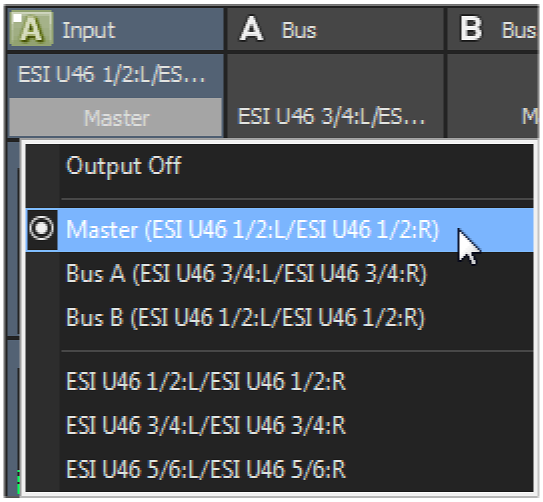

Input
Bus
ESI U46 1/2:L/ES...
Input Off
ESI U46 1/2:L/ESI U46 1/2:R
ESI U46 1/2:L
ESI U46 1/2:R
ESI U46 3/4:L/ESI U46 3/4:R
ESI U46 3/4:L
ESI U46 3/4:R

Choosing an output device

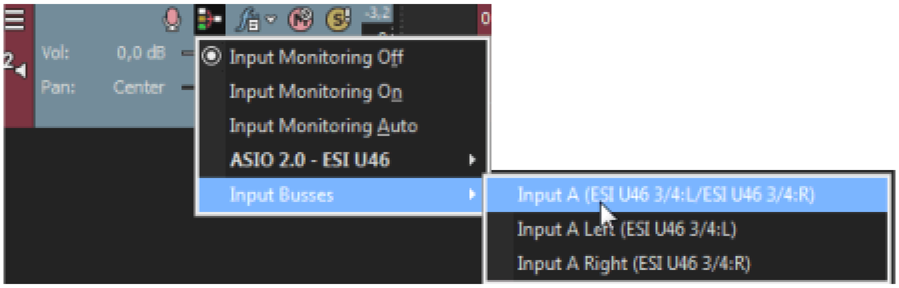
To choose an output device, click the OUTPUT button and choose a bus or hardware output from the menu, or choose OUTPUT OFF.

Setting the output to OUTPUT OFF is useful when you're using an input bus as a recording input and want to monitor the bus through the track or when using an input bus as a talkback mic.

> **IMPORTANT** When you route busses to hardware outputs, the outputs from those busses will not be included in the mix when you render your project.


Input
A Bus
B Bus
ESI U46 1/2:L/ES...
Master
ESI U46 3/4:L/ES...
M
Output Off
Master (ESI U46 1/2:L/ESI U46 1/2:R)
Bus A (ESI U46 3/4:L/ESI U46 3/4:R)
Bus B (ESI U46 1/2:L/ESI U46 1/2:R)
ESI U46 1/2:L/ESI U46 1/2:R
ESI U46 3/4:L/ESI U46 3/4:R
ESI U46 5/6:L/ESI U46 5/6:R

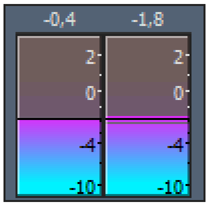
If you want to use an input bus as a track input, click the RECORD INPUT button on the track header, choose INPUT BUSSES from the menu, and choose an input bus from the submenu:


Vol: 0,0 dB
Pan: Center
Input Monitoring Off
Input Monitoring On
Input Monitoring Auto
ASIO 2.0 - ESI U46
Input Busses
Input A (ESI U46 3/4:L/ESI U46 3/4:R)
Input A Left (ESI U46 3/4:L)
Input A Right (ESI U46 3/4:R)

Monitoring bus levels with VU/PPM meters

When the VU Meters control region is visible, you can display volume unit (VU) and peak program (PPM) meters to help you determine the perceived loudness of your audio signal (peak program meters provide faster response times to volume increases than VU meters).

To show or hide the VU Meters control region, click the VU METERS button in the View Controls pane.

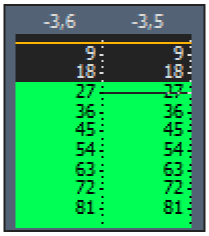

-0,4
-1,8
2
0
-4
-10
2
0
-4
-10

Right-click the meter and choose a setting from the shortcut menu (or hover over the meter and roll your mouse wheel) to change the resolution and display options. For more information, see [Monitor track levels with VU/PPM meters]()

Monitoring bus levels with peak meters

When the Meters control region is visible, each bus displays meters you can use to monitor output levels.

To show or hide the Meters control region, click the METERS button in the View Controls pane.



> **NOTE** If the Meters control region is not visible, peak meters are displayed in the Faders control region.

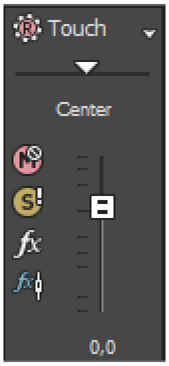
Right-click the meter and choose a setting from the shortcut menu to change the resolution and display options.

> **TIP** Right-click the peak meters and choose SHOW PEAK METER to show or hide meters for individual channels.

Muting or soloing a bus

When the Faders control region is visible, each bus displays MUTE and SOLO buttons.

To show or hide the Faders control region, click the FADERS button in the View Controls pane.



Muting a bus

When the AUTOMATION SETTINGS button is not selected, you can click the MUTE button to prevent a bus from being played in the mix. Click the MUTE button on additional busses to add them to the mute group. To unmute a bus, click the MUTE button again.

When the AUTOMATION SETTINGS button is selected, the MUTE button is displayed as , and you can use the button to edit mute automation on the bus track.

Soloing a bus

Click the SOLO button to mute all unselected busses. Click the SOLO button on additional busses to add them to the solo group. To remove a bus from the solo group, click its SOLO button again.

Adjusting bus volume or panning

When the Faders control region is visible, each input bus displays a PAN slider and a VOLUME fader.

> **TIP** The PAN slider is displayed only when an input bus is routed to the master bus or an auxiliary bus. It is not available when the input bus is routed directly to a hardware output.

To show or hide the Faders control region, click the FADERS button in the View Controls pane.

Adjusting panning

When the AUTOMATION SETTINGS button ® is not selected, you can drag the PAN slider to control the position of the bus in the stereo field: dragging to the left will place the bus in the left speaker more than the right, and dragging to the right will place the bus in the right speaker.

You can hold `Ctrl` while dragging the slider to adjust the setting in finer increments, or double-click the slider to return it to 0.

When the AUTOMATION SETTINGS button ® is selected, the PAN slider handle is displayed as a ▥, and you can use it to edit pan automation on the bus track.

> **NOTE** The trim level is added to the pan automation settings so your panning envelope is preserved, but with an offset applied. For example, setting the trim control to 9% left has the same effect as moving every envelope point 9% to the left.

Adjusting volume

When the AUTOMATION SETTINGS button ® is not selected, you can drag the VOLUME fader to control the overall (trim) volume of the bus.

You can hold `Ctrl` while dragging the slider to adjust the setting in finer increments, or double-click the slider to return it to 0.

When the AUTOMATION SETTINGS button ® is selected, the VOLUME fader handle is displayed as a ▤, and you can use it to edit volume automation on the bus track.

> **NOTE** The trim level is added to the volume automation settings so your envelope is preserved, but with a boost or cut applied. For example, setting the trim control to -3 dB has the same effect as decreasing every envelope point by 3 dB.

Changing pre/post routing

Insert effects on input busses are always pre fader: the FX chain is not affected by the channel's gain fader.

The PRE/POST FADER SEND button allows you to create cue mixes that are not affected by the gain (or mute/pan) stages of the bus or track. For more information, see [Creating a cue (headphone) mix with the Mixing Console]

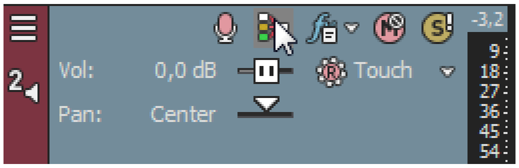
- When PRE FADER SEND is selected, your audio signal flows as follows: bus effects — bus send — bus pan — bus volume.
- When POST FADER SEND is selected, your audio signal flows as follows: bus effects — bus pan — bus volume — bus send.

Recording using an input bus

When you use an input bus to record audio, you can include input bus effects with the recorded signal.

For example, imagine that you need to record an electric guitar with an amplifier-modeling plug-in.

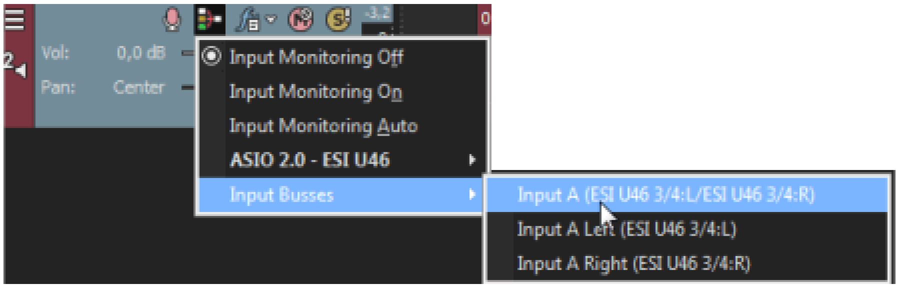
Scenario 1: Plug your guitar into your sound card's instrument input and choose that input as your recording input:



Vol: 0,0 dB
Pan: Center
Touch

In this scenario, you could then add your amplifier-modeling plug-in as a track effect and record with input monitoring on. Your guitar would be recorded directly (without the plug-in), and the plug-in would be processed each time you play or render your project. This method allows you to adjust the plug-in settings as you work on your project.

Scenario 2: Set up an input bus that uses your amplifier-modeling plug-in as an insert effect, and choose that input bus as your recording input:


Vol: 0,0 dB
Pan: Center
Input Monitoring Off
Input Monitoring On
Input Monitoring Auto
ASIO 2.0 - ESI U46
Input Busses
Input A (ESI U46 3/4:L/ESI U46 3/4:R)
Input A Left (ESI U46 3/4:L)
Input A Right (ESI U46 3/4:R)

In this scenario, your amplifier-modeling plug-in is cooked into the recorded signal. This method allows you to record your processed signal but doesn't allow you to change your amplifier settings without rerecording the guitar part.

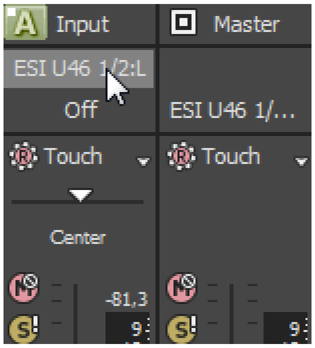
1. Add an input bus to your project.

   For more information, see [Adding or deleting input busses]

2. Set up your input bus:

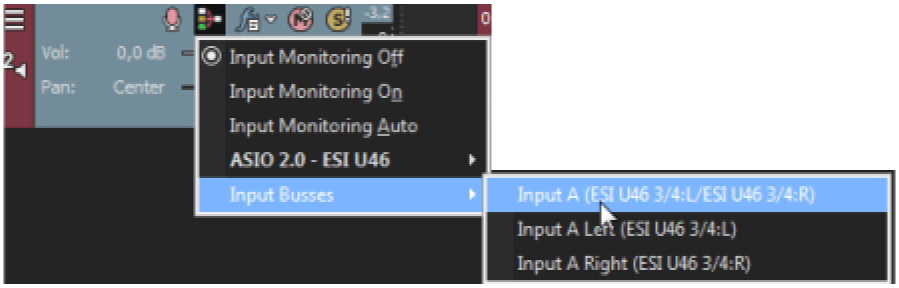
   a. Click the ADD NEW INSERT FX button ... in the Insert FX control region of the input bus channel strip to add plug-ins to your input bus.

   b. In the I/O control region of the input bus channel strip, click the INPUT SOURCE button and choose the sound card input you want to record:


A Input
Master
ESI U46 1/2:L
Off
ESI U46 1/...
Touch
Touch
Center
-81,3

   c. Click the OUTPUT button in the I/O control region of the input bus channel strip and choose OFF. The bus output is left off so we can monitor the input through the track.

3. Set your track to record from your input bus:
    a. Click the RECORD INPUT button, choose INPUT BUSSES from the menu, and choose your input bus.


Vol: 0,0 dB
Pan: Center
Input Monitoring Off
Input Monitoring On
Input Monitoring Auto
ASIO 2.0 - ESI U46
Input Busses
Input A (ESI U46 3/4:L/ESI U46 3/4:R)
Input A Left (ESI U46 3/4:L)
Input A Right (ESI U46 3/4:R)

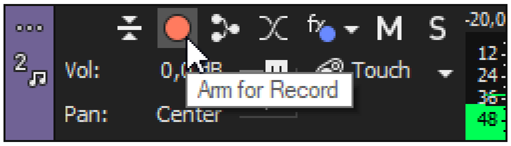
    b. Click the RECORD INPUT button and choose INPUT MONITOR MODE: ON or INPUT MONITOR MODE: AUTO so you can hear your input signal during recording.
        - When AUTO is selected, you will hear the input monitor signal when playback is stopped and during recording. If you're recording into selected events, you'll hear the input monitor signal only when the cursor passes over the selected events.
        - When ON is selected, the behavior is similar to AUTO mode, but you will always hear the input monitor during recording — monitoring is not toggled on and off when recording into a selected event.

> **IMPORTANT** Your ability to monitor effects in real time is dependent on your computer's performance. Effect automation envelopes are bypassed during record monitoring.

4. Position the cursor where you want to start recording.

5. Select the ARM FOR RECORD buttons on the track where you want to record. Arming a track enables it for recording.

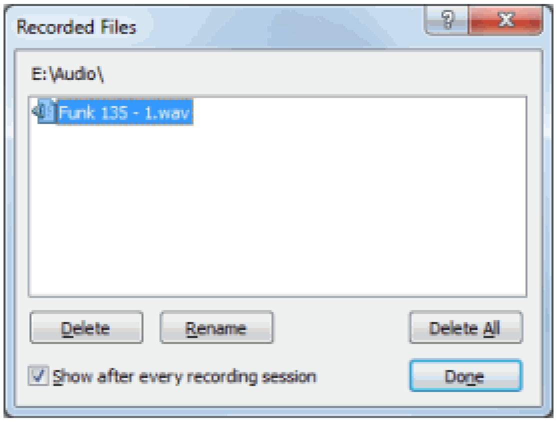
    When a track is armed, the track meter displays the track's level. If input monitoring is not on, the meter displays the level of your input source. If input monitoring is turned on, the meter shows the level of the input source plus the track effects chain.


2
Vol:
0,0 dB
Touch
Pan:
Center
Arm for Record
-20,0
12
24
36
48

6. Click the RECORD button ● on the Transport bar to start recording.

7. To stop recording, click the RECORD button again or click the STOP button ■ on the Transport bar. The Recorded Files dialog is displayed.

8. Use the Recorded Files dialog to confirm the file name and location of your recorded audio. Click DELETE or DELETE ALL if you do not want to save the recorded files, or click RENAME to change the file's name.


Recorded Files
E:\Audio\
Funk 135 - 1.wav
Delete
Rename
Delete All
☑ Show after every recording session
Done

9. Click DONE to close the Recorded Files dialog. Your recorded file is displayed as a new event in the timeline.

Using input busses with hardware-based effects

Plug-ins are great, but there are times when you may want the sound of a specific piece of hardware for your tracks. This help topic will show you how to use auxiliary busses and input busses to send a track to an external processor.

1. Connect your effects processor to your audio interface:
   a. Connect the input of your effects processor to an output from your sound card (for this example, we'll use LINEOUT 1).

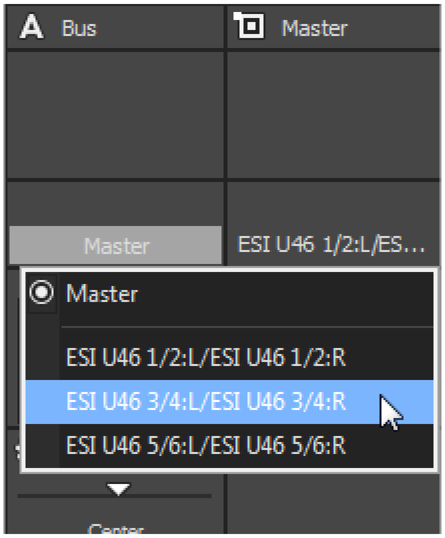
   b. Connect the output of your effects processor to an input on your sound card (for this example, we'll use INST 1).

2. Add a bus to your project. This bus will be used as a destination to send a track to your effects processor.

   For more information, see [Adding audio busses]()

3. Configure your bus to send its output to your effects processor:

   In the I/O control region of the bus's channel strip, click the OUTPUT button and choose the output that is connected to your effects processor's input (the Outputs 3/4 for this example).


Bus
Master
Master
ESI U46 1/2:L/ES...
Master
ESI U46 1/2:L/ESI U46 1/2:R
ESI U46 3/4:L/ESI U46 3/4:R
ESI U46 5/6:L/ESI U46 5/6:R
Center

   This auxiliary bus provides a signal path to your effects processor's input.

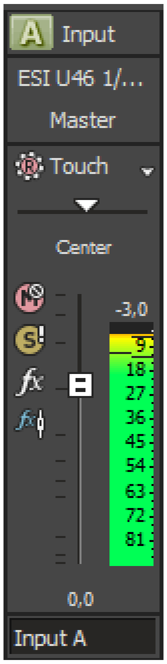
4. Add an input bus to your project. This input bus will receive the signal from your effects processor.

   For more information, see [Using input busses]()

5. Configure your input bus to take its input from the effects processor and send its output to your main mix:

   a. In the I/O control region of the input bus's channel strip, click the INPUT SOURCE button and choose the sound card input that is connected to your effects processor's output (Input 1/2 for this example).

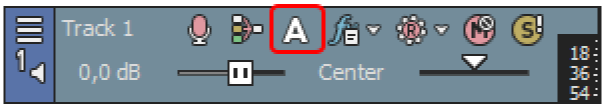
b. Click the OUTPUT button and choose the output where you want to send your processed signal. We'll send this signal to the master bus so it is included with your main mix and will be included when performing a real-time render.


A Input
ESI U46 1/...
Master
Touch
Center
-3,0
9
18
27
36
45
54
63
72
81
0,0
Input A

This input bus provides a signal path from your effects processor's output to your project.

6. Send your track to the effects processor:

   Click the bus button on the track header and choose the bus you created in step 2.


Track 1
1
0,0 dB
A
Center
18
36
54

The bus button on the track header lets you send the track's audio to your effects processor.

7. Click PLAY ▶.

   When you play your project, the track is sent to your auxiliary bus, into the effects processor, out of the effects processor into the input bus, and out to the master bus.

8. When you're ready to render your project, you can use real-time rendering to include the output from your effects processor with your project.

   For more information, see Real-time rendering

Real-time rendering

From the File menu, choose REAL-TIME RENDER to render your project in real time.

Real-time rendering is a playback mode that renders your project to .wav format. Real-time rendering allows you to include the output from an external input source such as an effects processor with your project.

For more information, see Using input busses and Using input busses with hardware-based effects

NOTE

- When you start real-time rendering, any track that is armed for recording will be unarmed. You cannot arm a track for recording or start recording in real-time rendering mode.
- When rendering a project that does not use external audio hardware, real-time rendering and normal rendering will produce the same output. Real-time rendering will take longer to complete, allowing you to monitor the rendered file as it is created.
- If the metronome is enabled for playback, it will not be included in the rendered output.

1. From the File menu, choose REAL-TIME RENDER.
2. Choose a drive and folder from the SAVE IN drop-down list, or use the browse window to locate the folder where you want to save your file.

   IMPORTANT When using real-time rendering, render your project to a localhard drive. Rendering to a network folder or removable drive can resultin gapping.

3. Type a name in the FILE NAME box, or select a file in the browse window to replace an existing file.
4. Click SAVE to start rendering your project from the beginning of the timeline.

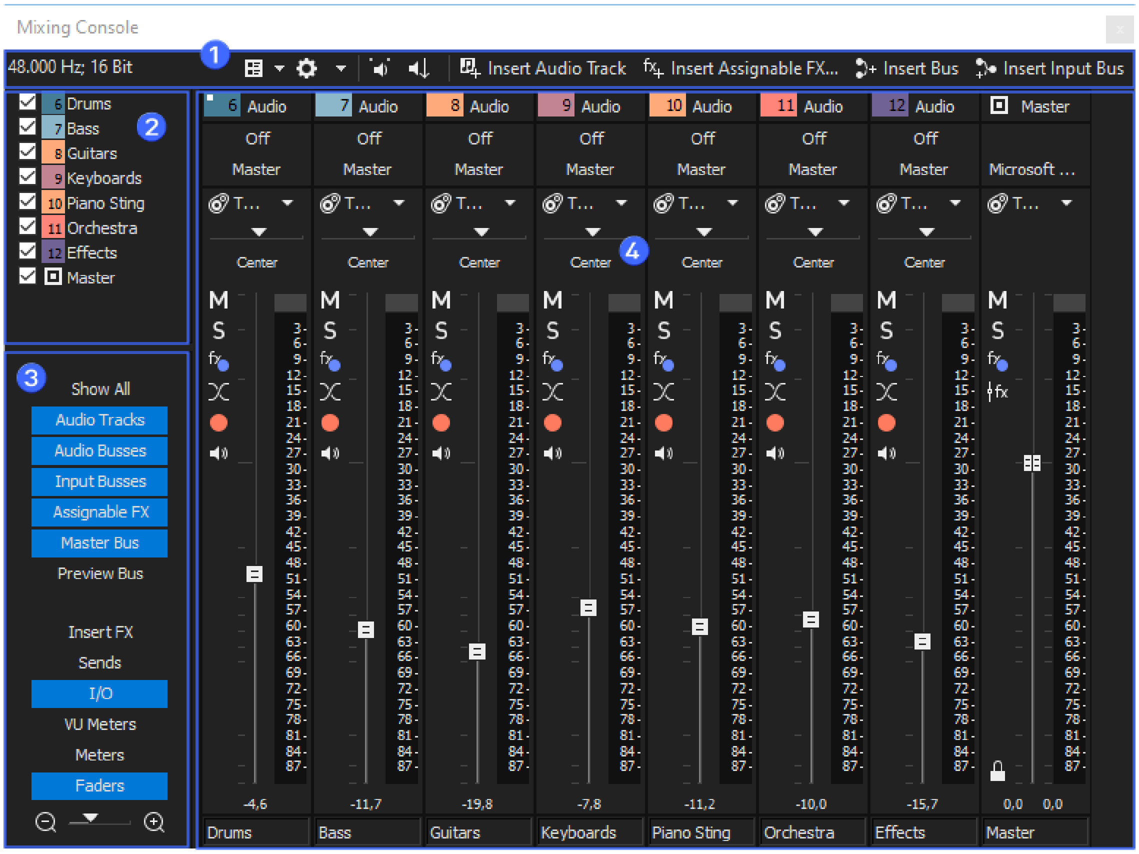
Using the Mixing Console

You can use the Mixing Console to mix your project in much the same way you work with a hardware-based mixer.

The Mixing Console

From the VIEW menu, choose WINDOW | MIXING CONSOLE to toggle the display of the Mixing Console window in VEGAS® Pro.

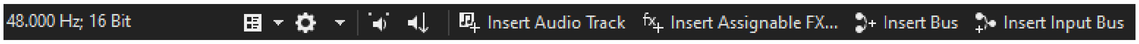
The Mixing Console window provides an integrated view of all tracks and busses in your project using the appearance of a traditional hardware-based mixer.


Mixing Console
48.000 Hz; 16 Bit
1
Insert Audio Track
Insert Assignable FX...
Insert Bus
Insert Input Bus
2
☑ 6 Drums
☑ 7 Bass
☑ 8 Guitars
☑ 9 Keyboards
☑ 10 Piano Sting
☑ 11 Orchestra
☑ 12 Effects
☑ Master
3
Show All
Audio Tracks
Audio Busses
Input Busses
Assignable FX
Master Bus
Preview Bus
Insert FX
Sends
I/O
VU Meters
Meters
Faders
4
6 Audio
7 Audio
8 Audio
9 Audio
10 Audio
11 Audio
12 Audio
Master
Off
Master
Microsoft ...
Center
M
S
-4,6
-11,7
-19,8
-7,8
-11,2
-10,0
-15,7
0,0
0,0
Drums
Bass
Guitars
Keyboards
Piano Sting
Orchestra
Effects
Master

		For more information, see
1	Toolbar	The Mixing Console Toolbar
2	Channel List	The Channel List Pane
3	View Controls	The View Controls Pane
4	Channel Strips	Channel Strips

The Mixing Console Toolbar

The Mixing Console toolbar is displayed at the top of the Mixing Console window and allows you to quickly configure the window's display; downmix audio; dim the output; or add tracks, assignable effects, or busses.


48.000 Hz; 16 Bit
Insert Audio Track
Insert Assignable FX...
Insert Bus
Insert Input Bus

Item	Description
Views	Click the down arrow and choose a command from the menu: ● CHANNEL LIST – Displays or hides the Channel List on the left side of the Mixing Console window. Select a channel strip's checkbox to display it in the Mixing Console, or clear a checkbox to hide a channel strip without removing it from your project. For more information, see The Channel List Pane ● VIEW CONTROLS – Displays or hides the View Controls pane, where you can show or hide components in the Mixing Console window. For more information, see The View Controls Pane

Item	Description
⚙ Properties and Layout	Click the PROPERTIES AND LAYOUT button ⚙ to open the Audio tab in the Project Properties dialog, or click the down arrow and choose a command from the menu: ● AUDIO PROPERTIES – Displays the Audio tab in the Project Properties dialog. ● SHOW CHANNELS – Choose a command to configure which channel strips are displayed in the Mixing Console window. ◉ SHOW ALL CHANNELS – Displays all channel strips in the Mixing Console. ◉ PREVIEW BUS – Shows or hides the Preview bus channel strip. ◉ MASTER BUS – Shows or hides the Master bus channel strip. ◉ ASSIGNABLE FX BUSSES – Shows or hides assignable FX channel strips. ◉ INPUT BUSSES – Shows or hides input bus channel strips. ◉ AUDIO BUSSES – Shows or hides auxiliary bus channel strips. ◉ AUDIO TRACKS – Shows or hides audio track channel strips. ● SHOW CONTROL REGIONS – Choose a command to configure which portions of the channel strips are displayed in the Mixing Console window. ◉ SHOW ALL CONTROL REGIONS – Displays all control regions. ◉ FADERS CONTROL REGION – Shows or hides volume faders.

Item	Description
	◉ PEAK METERS CONTROL REGION – Shows or hides Peak Meters. ◉ VU METERS CONTROL REGION – Shows or hides the VU/PPM control region. ◉ I/O CONTROL REGION – Shows or hides the I/O control region. ◉ SENDS CONTROL REGION – Shows or hides the Sends control region. ◉ INSERT FX CONTROL REGION – Shows or hides the Insert FX control region. ● SHOW CONTROL REGION LABELS – Choose this command to show or hide control region labels in channel strips. ● SHOW FADER TICKS – Choose this command to show or hide scale indicators next to fader controls. ● CHANNEL WIDTH – Choose a setting to indicate whether you want to view narrow, medium (default), or wide channel strips in the Mixing Console window. ● METER LAYOUT – Choose **Meter Layout**, and then choose a command from the submenu to reset clip indicators; set the display range; or display labels, peaks, or valleys in the channel meters.

Item	Description
DOWNMIX OUTPUT	Downmixes your audio from 5.1 surround to stereo or from stereo to mono so you can ensure your mix will sound the way you intended it —even when your audience's hardware has fewer channels than the original mix. The button represents the current playback mode: • 5.1 surround output • Stereo output • Mono output
DIM OUTPUT	Attenuates the volume of all busses that are routed to hardware outputs by 20 dB so you can check your mix at a lower level (or answer the phone). Click again to restore volume.
INSERT AUDIO TRACK	Adds an audio track to your project.
INSERT ASSIGNABLE FX	Creates an assignable FX chain that you can route to one or more tracks in your project. To delete an assignable FX chain, right-click the assignable FX channel strip and choose DELETE from the shortcut menu.
INSERT BUS	Adds a bus to your project. The Audio tab in the Project Properties dialog is updated to reflect the new number of busses. To delete a bus, right-click the channel strip for the bus and choose DELETE from the shortcut menu.
Insert Input Bus	Adds an input bus to your project. To delete a bus, right-click the channel strip for the bus and choose DELETE from the shortcut menu.

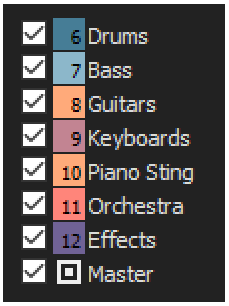
The Channel List Pane

The Channel List pane is displayed on the left side of the Mixing Console window.

To show or hide the pane, click the down arrow next to the VIEWS button and choose CHANNEL LIST (or press Shift+C).

The top of the Channel List pane displays a listing of all tracks, busses, and assignable effects chains in your project. Select a channel's checkbox to include it in the Mixing Console display, or clear a checkbox to hide the channel without removing it from your project.

Clicking a track, bus, or assignable effects chain in the Channel List pane selects that channel. You can hold Ctrl or Shift to select multiple channels to perform ganged edits.



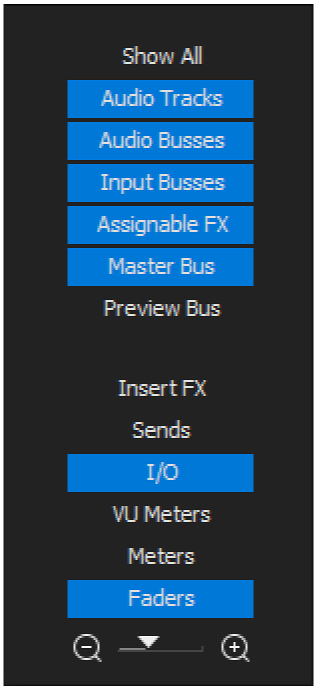
☑ 6 Drums
☑ 7 Bass
☑ 8 Guitars
☑ 9 Keyboards
☑ 10 Piano Sting
☑ 11 Orchestra
☑ 12 Effects
☑ Master

The View Controls Pane

The View Controls pane is displayed on the left side of the Mixing Console window. If the Channel List pane is visible, the View Controls Pane is displayed below the Channel List pane.

To show or hide the pane, click the down arrow next to the VIEWS button and choose VIEW CONTROLS (or press Shift+R).

You can use the buttons in this pane to show or hide components in the Mixing Console.


Show All
Audio Tracks
Audio Busses
Input Busses
Assignable FX
Master Bus
Preview Bus
Insert FX
Sends
I/O
VU Meters
Meters
Faders

Item	Description
Show All	Click to show channel strips for all tracks, busses, and assignable effects chains.
Audio Tracks	Click to show or hide channel strips for audio tracks. If your project does not contain any audio tracks, this button is unavailable.
Audio Busses	Click to show or hide channel strips for busses. If your project does not contain any busses, this button is unavailable.
Input Busses	Click to show or hide channel strips for input busses. If your project does not contain any input busses, this button is unavailable.
Assignable FX	Click to show or hide channel strips for assignable effects chains. If your project does not contain any assignable effects chains, this button is unavailable.
Master Bus	Click to show or hide the channel strip for the Master bus.
Preview Bus	Click to show or hide the channel strip for the Preview bus.
Insert FX	Click to show or hide the insert effects control region in channel strips.
Sends	Click to show or hide the sends control region in channel strips.
I/O	Click to show or hide the I/O control region in channel strips.
VU Meters	Click to show or hide the VU/PPM control region in channel strips.
Meters	Click to show or hide the Meters control region in channel strips.
Faders	Click to show or hide the Faders control region in channel strips.

Item	Description
Channel Width	Drag the slider toward 🔍 to decrease the width of channel strips, or drag toward 🔍 to increase channel strip widths.

Channel Strips

Audio tracks, busses, input busses, and assignable effects chains are displayed as channel strips in the Mixing Console.

When a control surface is enabled, an indicator is displayed in the Mixing Console to indicate which channels are under external control. Multiple bars are displayed if a channel is under the control of multiple devices.

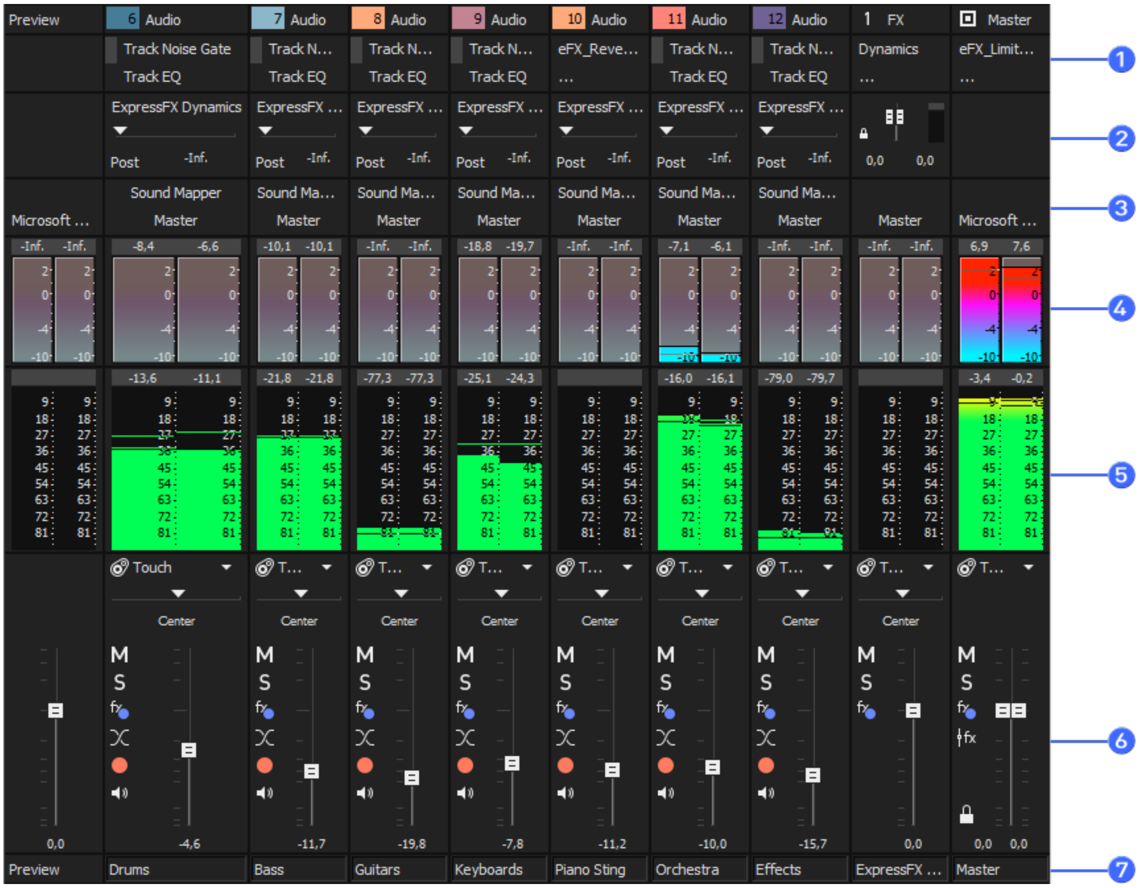

Preview
6 Audio
7 Audio
8 Audio
9 Audio
10 Audio
11 Audio
12 Audio
1 FX
Master
Track Noise Gate
Track EQ
eFX_Reve...
Dynamics
eFX_Limit...
ExpressFX Dynamics
Post
-Inf.
Sound Mapper
Master
Microsoft ...
Touch
Center
M
S
fx
Preview
Drums
Bass
Guitars
Keyboards
Piano Sting
Orchestra
Effects
ExpressFX ...
Master
1
2
3
4
5
6
7

***FIGURE** Mixing Console window*

Region	Description
1Insert FX Control Region	The Insert FX control region displays the insert effects chain for a track or bus.
2Sends Control Region	The Sends control region displays controls for routing tracks to busses or assignable effects chains. For assignable effects chains, the Send Region also displays an input fader and meter.
3I/O Control Region	The I/O control region allows you to choose the recording input for a track or route a channel to a bus or hardware output.
4VU Meters Control Region	The VU Meters control region displays volume unit (VU) and peak program (PPM) meters to help you determine the perceived loudness of your audio signal (peak program meters provide faster response times to volume increases than VU meters). **TIP** To change the range of all VU meters in the Mixing Console, right-click a meter and choose a range from the shortcut menu.
5Meters Control Region	The Meters control region displays peak meters you can use to monitor instantaneous levels during playback and determine the loudest level in your audio signal. If the Meters control region is not visible, the Fader control region also displays a peak meter. **TIP** To change the range of all meters in the Mixing Console, right-click a meter and choose a range from the shortcut menu.

Region	Description
6Faders Control Region	The Faders control region allows you to control a channel's gain. • Audio track channels display controls for the track automation mode, arm for record, input monitor mode, mute, solo, pan, track gain, and phase. • Bus channels display controls for the bus automation mode, mute, solo, pan, bus gain, and pre/post fader effects processing. • Assignable effects channels display controls for the bus automation mode, mute, solo, pan, bus gain, and pre/post fader effects processing.
7Channel Label	The Channel Label displays the name of the track or bus. Double-click to edit the name.

TIP

- If you want to change the order in which channel strips are displayed, you can click the channel label and drag a channel strip to a new location.
- Hover over a fader and roll your mouse wheel to change its setting.
- To edit a fader value quickly, you can double-click the displayed value to type a new value.
- Hold Ctrlwhile dragging a fader to move it in fine increments.

Adding Track, Assignable FX, and Bus Channels

In its default configuration, the Mixing Console displays a channel for each track, bus, and assignable effects chain in your project.

You can use the buttons on The Mixing Console Toolbar to add tracks, assignable effects chains, or busses to your project:

Item	Description
INSERT AUDIO TRACK	Adds an audio track to your project.
INSERT ASSIGNABLE FX	Creates an assignable FX chain that you can route to one or more tracks in your project. For more information, see "FX Send (Assignable Effects) Channel Strips." To delete an assignable FX chain, right-click the assignable FX channel strip and choose DELETE from the shortcut menu (or select it and press the Delete key).
INSERT BUS	Adds a bus to your project. The Audio tab in the Project Properties dialog is updated to reflect the new number of busses. For more information, see Bus Channel Strips To delete a bus, right-click the channel strip for the bus and choose DELETE from the shortcut menu.
Insert Input Bus	Adds an input bus to your project. For more information, see Input bus channel strips To delete an input bus, right-click the channel strip for the bus and choose DELETE from the shortcut menu.

Audio Track Channel Strips

A separate channel strip is displayed for each audio track in your project. Each channel strip mirrors controls that are displayed in the track header.

To show or hide audio track channel strips, click the TRACKS button in the View Controls pane.

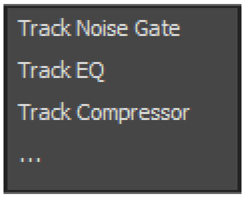
Changing a track's name

To rename a track, double-click the track label at the bottom of the channel strip and type a new name in the box (or press F2 to rename the selected track). The channel strip in the Mixing Console and the track header are updated when you press Enter.

Adding or editing track (insert) effects

When the Insert FX control region is visible, each track displays its effects chain at the top of the channel strip.

To show or hide the Insert FX control region, click the INSERT FX button in the View Controls pane.



Each effect is displayed as a button. You can hover over the button to see a ToolTip that displays the full plug-in and preset name.

> **TIP** When the Insert FX control region isn't visible, you can click the TRACK FX button fx in the Faders control region to display the Audio Plug-In window for the track's effects chain.

Adding a plug-in

Click the ... button and then choose a new plug-in from the menu to add a new plug-in to the effects chain.

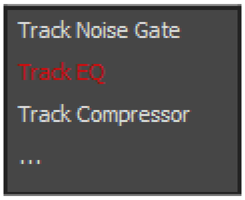
Editing effects settings

Click an effect's button to display the Audio Plug-In window, where you can adjust the plug-in's settings.

When you right-click an effect's button, a shortcut a menu is displayed:

- Choose SHOW <PLUG-IN NAME> to open the Audio Plug-In window, where you can adjust the plug-in's controls.
- Choose BYPASS <PLUG-IN NAME> to temporarily bypass a plug-in.

  When an effect is bypassed, its button is displayed in red text.

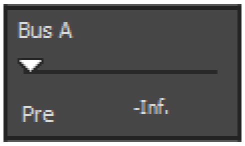
  

- Choose REMOVE <PLUG-IN NAME> to remove a plug-in from the track effects chain.
- Choose PRESETS, and then choose a setting from the submenu to load a new preset. The current preset is indicated by a bullet (•).
- To replace the current plug-in, right-click the effect's button, and then choose a new plug-in from the menu. Plug-ins are organized in submenus by type (EQ, Dynamics, Reverbs, etc.).

Adjusting bus or assignable effects send levels

When the Sends control region is visible, each track displays controls you can use to route the track to busses and assignable effects chains.

To show or hide the Sends control region, click the SENDS button in the View Controls pane.



When the AUTOMATION SETTINGS button in the Faders control region is not selected, click the CHANNEL SEND button and choose a bus or assignable effects chain from the menu, and then drag the fader to adjust the send level.

When the AUTOMATION SETTINGS button in the Faders control region is selected, the fader handle is displayed as a , and you can use it to edit send volume automation on the track.

> **NOTE** The trim level is added to the automation settings so your envelope is preserved, but with a boost or cut applied. For example, setting the trim control to -3 dB has the same effect as decreasing every envelope point by 3 dB.

> **TIP** To adjust the size of the Sends control region, you can drag the bottom divider to make more or fewer sends visible.

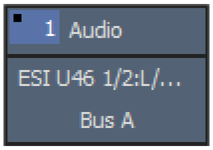
Bus sends are pre-volume (and pre-mute) by default. When bus sends are pre-volume, you can create a cue mix that is independent of your main mix. For more information, see [Creating a cue (headphone) mix with the Mixing Console]

To change to post-volume (and post-mute), click the PRE/POST button to switch to POST VOLUME SEND mode.

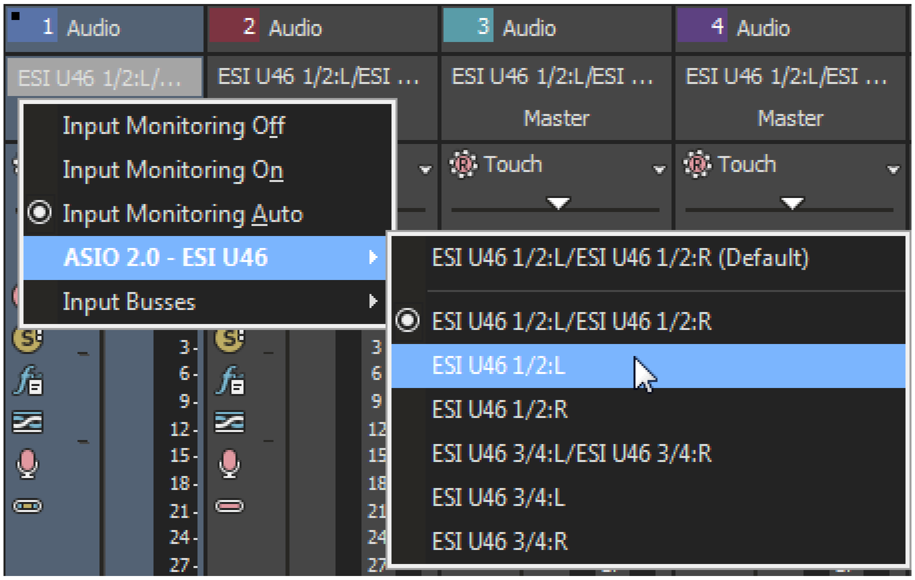
Changing a track's input or output device

When the I/O control region is visible, each track displays controls you can use to set the track's input device (for recording) and output device.

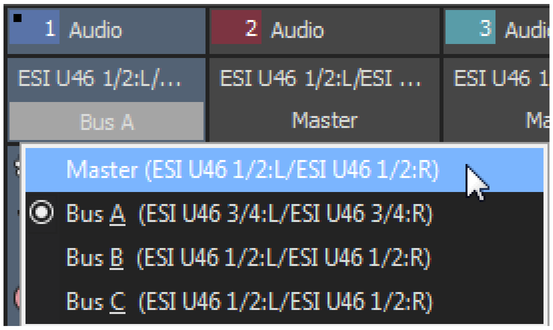
To show or hide the I/O control region, click the I/O button in the View Controls pane.



To choose the recording input for the track, click the Input button and choose a port from the menu:


1 Audio
2 Audio
3 Audio
4 Audio
ESI U46 1/2:L/...
ESI U46 1/2:L/ESI ...
ESI U46 1/2:L/ESI ...
ESI U46 1/2:L/ESI ...
Master
Master
Touch
Touch
Input Monitoring Off
Input Monitoring On
Input Monitoring Auto
ASIO 2.0 - ESI U46
Input Busses
ESI U46 1/2:L/ESI U46 1/2:R (Default)
ESI U46 1/2:L/ESI U46 1/2:R
ESI U46 1/2:L
ESI U46 1/2:R
ESI U46 3/4:L/ESI U46 3/4:R
ESI U46 3/4:L
ESI U46 3/4:R

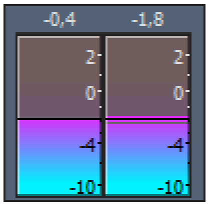
To route a track to a bus, click the Output button and choose a bus from the menu:


1 Audio
2 Audio
3 Audi
ESI U46 1/2:L/...
ESI U46 1/2:L/ESI ...
ESI U46 1
Bus A
Master
Ma
Master (ESI U46 1/2:L/ESI U46 1/2:R)
Bus A (ESI U46 3/4:L/ESI U46 3/4:R)
Bus B (ESI U46 1/2:L/ESI U46 1/2:R)
Bus C (ESI U46 1/2:L/ESI U46 1/2:R)

Monitor track levels with VU/PPM meters

When the VU Meters control region is visible, you can display volume unit (VU) and peak program (PPM) meters to help you determine the perceived loudness of your audio signal (peak program meters provide faster response times to volume increases than VU meters).

To show or hide the VU Meters control region, click the VU METERS button in the View Controls pane.



Right-click the meter and choose a setting from the shortcut menu (or hover over the meter and roll your mouse wheel) to change the resolution and display options.

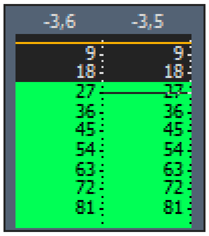
<table>
<tr><th>Item</th><th colspan="2">Description</th></tr>
<tr><td>Show VU/PPM</td><td colspan="2">Use this command to show or hide meters for individual channels.</td></tr>
<tr><td>Reset Clip</td><td colspan="2">Clears clipping indicators.</td></tr>
<tr><td>Traditional VU</td><td colspan="2">The traditional VU meter is displayed with a scale of –10 dB to +2 dB. 0 dB on the VU meter equals 4 dBu.</td></tr>
<tr><td>Extended VU</td><td colspan="2">The extended VU meter is displayed with a scale of –30 dB to +8 dB. 0 dB on the VU meter equals 4 dBu.</td></tr>
<tr><td>Logarithmic VU</td><td colspan="2">Displays the meters in a logarithmic scale (like the Sound Forge peak meters) instead of the linear scales traditionally associated with VU meters.</td></tr>
<tr><td rowspan="9">UK PPM</td><td colspan="2">The UK peak program meter (also known as a BBC meter) is a Type II meter and is displayed with a scale of 1 to 7, which corresponds to a range of -12 to 12 dBu:</td></tr>
<tr><td>UK Marks</td><td>dBu</td></tr>
<tr><td>7</td><td>12</td></tr>
<tr><td>6</td><td>8</td></tr>
<tr><td>5</td><td>4</td></tr>
<tr><td>4</td><td>0</td></tr>
<tr><td>3</td><td>4</td></tr>
<tr><td>2</td><td>8</td></tr>
<tr><td>1</td><td>-12</td></tr>
</table>

Item	Description
EBU PPM	The EBU peak program meter is a Type II meter and is displayed with a scale of –12 to +12, which corresponds to -12 dBu to 12 dBu. 0 on the EBU PPM equals 0 dBu. The EBU PPM and UK PPM respond identically to increases in volume, but the EBU PPM decays more slowly.
DIN PPM	The DIN peak program meter is a Type I meter and is displayed with a scale of –50 dB to +5 dB, which corresponds to -44 dBu to 11 dBu. 0 dB on the DIN PPM equals 6 dBu.
Nordic PPM	The Nordic peak program meter is a Type I meter and is displayed with a scale of –42 dB to +12 dB, which corresponds to -42 dBu to 12 dBu. 0 dB on the Nordic PPM equals 0 dBu.
Show Labels	Toggles the meter level labels on and off.
Show Peaks	Toggles peak level indicators on the top of the meter.
Hold Peaks	When selected, the highest peak levels are represented by a thin line on the meter.
Hold Valleys	When selected, the lowest peak levels are represented by a thin line on the meter.
Vintage Mode	When Vintage Mode is selected, the VU meters use a different calculation method to simulate the response of analog VU meters.

Monitoring track levels with peak meters

When the Meters control region is visible, each track displays meters you can use to monitor track levels.

To show or hide the Meters control region, click the METERS button in the View Controls pane.



NOTE If the Meters control region is not visible, peak meters are displayed in the Faders control region.

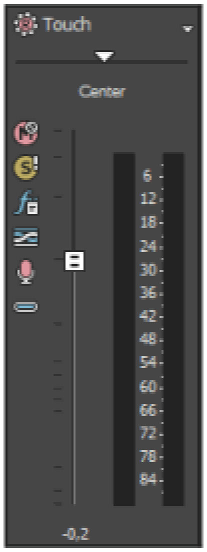
Right-click the meter and choose a setting from the shortcut menu (or hover over the meter and roll your mouse wheel) to change the resolution and display options.

TIP Right-click the peak meters and choose SHOW PEAK METER to show or hide meters for individual channels.

Changing a track's automation mode

When the Faders control region is visible, each track displays controls you can use to adjust track panning, volume and muting. The controls can adjust static (trim) or automation levels. Use the AUTOMATION SETTINGS button at the top of the Faders control region to choose the automation mode and turn automation on or off.

To show or hide the Faders control region, click the FADERS button in the View Controls pane.



To change a track's automation recording mode, click the down arrow next to the AUTOMATION SETTINGS button and choose a setting from the menu.

The track controls behave differently depending on the track's automation recording mode:

- When the track automation mode is set to OFF, the control adjusts the level of the entire track. In this mode, the automation control acts as a second trim control.
- When the track has a volume or pan envelope and the track automation mode is set to READ, the control will follow the envelope during playback but cannot be adjusted.
- When the track automation mode is set to TOUCH or LATCH, the control edits the envelope setting at the cursor position. If the track does not have an envelope, an envelope will be added when you adjust the control.

Click the button (so the AUTOMATION SETTINGS button is not selected) if you want the Fader control region controls to function as trim controls. Adjusting a trim control affects the entire track. When the AUTOMATION SETTINGS button is selected, you can use the buttons to edit pan, volume, and mute automation for the track.

Muting or soloing a track

When the Faders control region is visible, each track displays MUTE and SOLO buttons.

To show or hide the Faders control region, click the FADERS button in the View Controls pane.

Muting a track

When the AUTOMATION SETTINGS button is not selected, you can click the MUTE button to prevent a track from being played in the mix. Click the MUTE button on additional tracks to add them to the mute group. To unmute a track, click the MUTE button again.

When the AUTOMATION SETTINGS button is selected, the MUTE button is displayed as , and you can use the button to edit mute automation.

Soloing a track

Click the SOLO button to mute all unselected tracks. Click the SOLO button on additional tracks to add them to the solo group. To remove a track from the solo group, click its SOLO button again.

Inverting a track's phase

When the Faders control region is visible, each track displays an INVERT TRACK PHASE button .

To show or hide the Faders control region, click the FADERS button in the View Controls pane.

Click the INVERT TRACK PHASE button to reverse the phase of all events on an audio track.

Although inverting data does not make an audible difference in a single file, it can prevent phase cancellation when mixing or crossfading audio signals.

Select multiple tracks to invert several tracks simultaneously.

> **NOTE** If the INVERT event switch is selected, inverting the phase of the track will return the event to its original phase.

Arming a track for recording or toggle input monitoring

When the Faders control region is visible, each track displays an ARM FOR RECORD button ● and an INVERT MONITOR MODE button.

To show or hide the Faders control region, click the FADERS button in the View Controls pane.

Arming tracks for recording

Select the ARM FOR RECORD button ● on the tracks where you want to record. Arming a track enables it for recording.

When a track is armed, the track meter displays the track's level. If input monitoring is not on, the meter displays the level of your input source. If input monitoring is turned on, the meter shows the level of the input source plus the track effects chain.

Toggling record input monitoring

Click the INPUT MONITOR MODE button and choose a command from the menu.

> **NOTE** This button is available only when you're using a low-latency audio device that supports input monitoring.

To turn on input monitoring, click the INPUT MONITOR MODE button and then choose INPUT MONITOR MODE: ON or INPUT MONITOR MODE: AUTO from the menu. During recording, your signal will be played back with the current track effects chain, but a dry (unprocessed) signal is recorded.

- When ON is selected, the behavior is similar to Auto mode, but you will always hear the input monitor during recording—monitoring is not toggled on and off when recording in to a selected event.
- When AUTO is selected, you will hear the input monitor signal when playback is stopped and during recording. If you're recording into selected events, you'll hear the input monitor signal only when the cursor passes over the selected events.

> **IMPORTANT** Your ability to monitor effects in real time is dependent on your computer's performance. Effect automation envelopes are bypassed during record monitoring.

Adjusting track panning or volume

When the Faders control region is visible, each track displays a PAN slider and a VOLUME fader.

To show or hide the Faders control region, click the FADERS button in the View Controls pane.

Adjusting panning

When the AUTOMATION SETTINGS button is not selected, you can drag the PAN slider to control the position of the track in the stereo field: dragging to the left will place the track in the left speaker more than the right, and dragging to the right will place the track in the right speaker.

You can hold Ctrl while dragging the slider to adjust the setting in finer increments, or double-click the slider to return it to 0.

When the AUTOMATION SETTINGS button is selected, the PAN slider handle is displayed as a , and you can use it to edit pan automation.

> **NOTE** The trim level is added to the pan automation settings so your panning envelope is preserved, but with an offset applied. For example, setting the trim control to 9% left has the same effect as moving every envelope point 9% to the left.

Adjusting volume

When the AUTOMATION SETTINGS button is not selected, you can drag the VOLUME fader to control the overall (trim) volume of the track.

You can hold Ctrl while dragging the slider to adjust the setting in finer increments, or double-click the slider to return it to 0.

When the AUTOMATION SETTINGS button is selected, the VOLUME fader handle is displayed as a , and you can use it to edit volume automation.

> **NOTE** The trim level is added to the volume automation settings so your envelope is preserved, but with a boost or cut applied. For example, setting the trim control to -3 dB has the same effect as decreasing every envelope point by 3 dB.

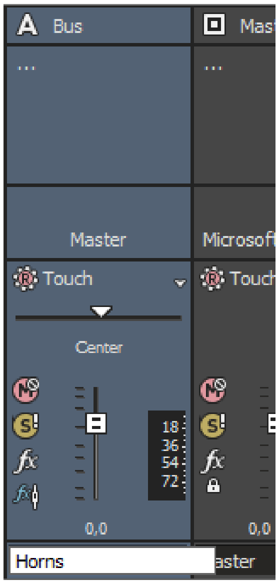
Bus Channel Strips

A separate channel strip is displayed for each bus in your project.

To show or hide channel strips for busses, click the BUSSES button in the View Controls pane.

Changing a bus's name

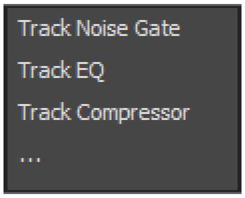
To rename a bus, double-click the label at the bottom of the channel strip and type a new name in the box (or press F2 to rename the selected bus). The channel strip in the Mixing Console is updated when you press Enter.


Bus
Mas
...
...
Master
Microsof
Touch
Touc
Center
18
36
54
72
0,0
0,0
Horns
aster

Adding or editing bus (insert) effects

When the Insert FX control region is visible, each bus displays its effects chain at the top of the channel strip.

To show or hide the Insert FX control region, click the INSERT FX button in the View Controls pane.


Track Noise Gate
Track EQ
Track Compressor
...

Each effect is displayed as a button. You can hover over the button to see a ToolTip that displays the full plug-in and preset name.

> **TIP** When the Insert FX control region isn't visible, you can click the BUS FX button in the Faders control region to display the Audio Plug-In window for the bus effects chain.

Adding a plug-in

Click the ... button and then choose a new plug-in from the menu to add a new plug-in to the effects chain.

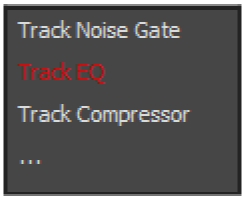
Editing effects settings

Click an effect's button to display the Audio Plug-In window, where you can adjust the plug-in's settings.

When you right-click an effect's button, a shortcut a menu is displayed:

- Choose SHOW <PLUG-IN NAME> to open the Audio Plug-In window, where you can adjust the plug-in's controls.
- Choose BYPASS <PLUG-IN NAME> to temporarily bypass a plug-in.

  When an effect is bypassed, its button is displayed in red text.

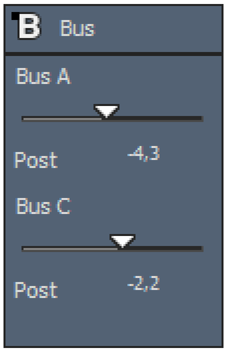
  Track Noise Gate
  Track EQ
  Track Compressor
  ...

- Choose REMOVE <PLUG-IN NAME> to remove a plug-in from the effects chain.
- Choose PRESETS, and then choose a setting from the submenu to load a new preset. The current preset is indicated by a bullet (•).
- To replace the current plug-in, right-click the effect's button, and then choose a new plug-in from the menu. Plug-ins are organized in submenus by type (EQ, Dynamics, Reverbs, etc.).

Adjusting bus send levels

When the Sends control region is visible, each bus displays controls you can use to route the bus to assignable effects chains or to busses that are routed to hardware outputs. A bus cannot send to a bus that is directly or indirectly routed to the Master bus.

To show or hide the Sends control region, click the SENDS button in the View Controls pane.



When the AUTOMATION SETTINGS button in the Faders control region is not selected, click the CHANNEL SEND button and choose a bus or assignable effects chain from the menu, and then drag the fader to adjust the send level.

When the AUTOMATION SETTINGS button in the Faders control region is selected, the fader handle is displayed as a , and you can use it to edit send volume automation on the bus track.

> **NOTE** The trim level is added to the automation settings so your envelope is preserved, but with a boost or cut applied. For example, setting the trim control to -3 dB has the same effect as decreasing every envelope point by 3 dB.

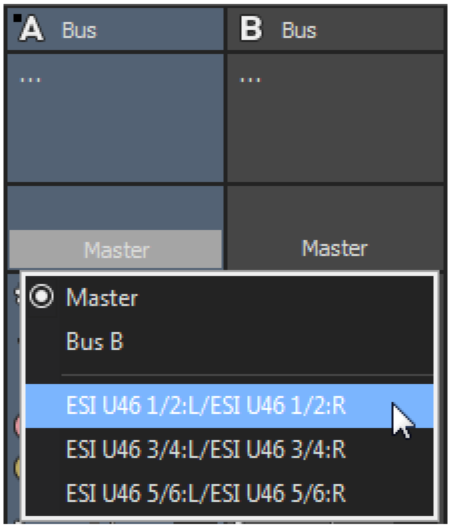
> **TIP** To adjust the size of the Sends control region, you can drag the bottom divider to make more or fewer sends visible.

Bus sends are post-volume (and post-mute) by default. To change to pre-volume (and pre-mute), click the PRE/POST button to switch to PRE-VOLUME SEND mode.

Changing a bus's output device

When the I/O control region is visible, each bus displays controls you can use to set the bus's output device.

To show or hide the I/O control region, click the I/O button in the View Controls pane.


A Bus
B Bus
...
...
Master
Master
Master
Bus B
ESI U46 1/2:L/ESI U46 1/2:R
ESI U46 3/4:L/ESI U46 3/4:R
ESI U46 5/6:L/ESI U46 5/6:R

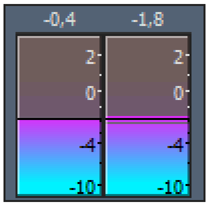
To choose an output device, click the OUTPUT button and choose a bus or hardware output from the menu.

> **IMPORTANT** When you route busses to hardware outputs, the outputs from those busses will not be included in the mix when you render your project.

Monitoring bus levels with VU/PPM meters

When the VU Meters control region is visible, you can display volume unit (VU) and peak program (PPM) meters to help you determine the perceived loudness of your audio signal (peak program meters provide faster response times to volume increases than VU meters).

To show or hide the VU Meters control region, click the VU METERS button in the View Controls pane.

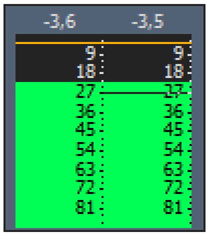


Right-click the meter and choose a setting from the shortcut menu (or hover over the meter and roll your mouse wheel) to change the resolution and display options. For more information, see [Monitor track levels with VU/PPM meters]()

Monitoring bus levels with peak meters

When the Meters control region is visible, each bus displays meters you can use to monitor output levels.

To show or hide the Meters control region, click the METERS button in the View Controls pane.



> **NOTE** If the Meters control region is not visible, peak meters are displayed in the Faders control region.

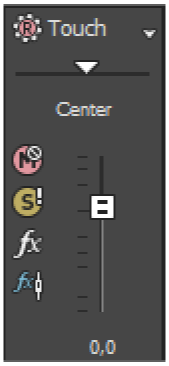
Right-click the meter and choose a setting from the shortcut menu (or hover over the meter and roll your mouse wheel) to change the resolution and display options.

> **TIP** Right-click the peak meters and choose SHOW PEAK METER to show or hide meters for individual channels.

Muting or solo a bus

When the Faders control region is visible, each bus displays MUTE and SOLO buttons.

To show or hide the Faders control region, click the FADERS button in the View Controls pane.



Muting a bus

When the AUTOMATION SETTINGS button is not selected, you can click the MUTE button to prevent a bus from being played in the mix. Click the MUTE button on additional busses to add them to the mute group. To unmute a bus, click the MUTE button again.

When the AUTOMATION SETTINGS button is selected, the MUTE button is displayed as , and you can use the button to edit mute automation on the bus track.

Soloing a bus

Click the SOLO button to mute all unselected busses. Click the SOLO button on additional busses to add them to the solo group. To remove a bus from the solo group, click its SOLO button again.

Adjusting bus panning or volume

When the Faders control region is visible, each bus displays a PAN slider and a VOLUME fader.

> **TIP** The PAN slider is displayed only when an input bus is routed to the master bus or an auxiliary bus. It is not available when the input bus is routed directly to a hardware output.

To show or hide the Faders control region, click the FADERS button in the View Controls pane.

Adjusting panning

When the AUTOMATION SETTINGS button Ⓡ is not selected, you can drag the PAN slider to control the position of the bus in the stereo field: dragging to the left will place the bus in the left speaker more than the right, and dragging to the right will place the bus in the right speaker.

You can hold Ctrl while dragging the slider to adjust the setting in finer increments, or double-click the slider to return it to 0.

When the AUTOMATION SETTINGS button Ⓡ is selected, the PAN slider handle is displayed as a ⏸, and you can use it to edit pan automation on the bus track.

> **NOTE** The trim level is added to the pan automation settings so your panning envelope is preserved, but with an offset applied. For example, setting the trim control to 9% left has the same effect as moving every envelope point 9% to the left.

Adjusting volume

When the AUTOMATION SETTINGS button Ⓡ is not selected, you can drag the VOLUME fader to control the overall (trim) volume of the bus.

You can hold Ctrl while dragging the slider to adjust the setting in finer increments, or double-click the slider to return it to 0.

When the AUTOMATION SETTINGS button is selected, the VOLUME fader handle is displayed as a , and you can use it to edit volume automation on the bus track.

> **NOTE** The trim level is added to the volume automation settings so your envelope is preserved, but with a boost or cut applied. For example, setting the trim control to -3 dB has the same effect as decreasing every envelope point by 3 dB.

Changing pre/post routing

The PRE/POST-FADER SEND button in the Sends control region and the PRE/POST FADER INSERT FX button in the Faders control region work together to determine the signal flow for your busses.

The PRE/POST FADER INSERT FX button allows you to indicate whether the insert FX chain is affected by the channel's gain fader. When set to POST FADER INSERT FX , the FX chain is affected by the channel's gain. When set to PRE FADER INSERT FX , the FX chain is not affected by the channel's gain fader, which is essential on the master bus when using plug-ins that dither the audio for final rendering.

The PRE/POST FADER SEND button allows you to create cue mixes that are not affected by the gain (or mute/pan) stages of the bus or track. For more information, see [Creating a cue (headphone) mix with the Mixing Console]()

- When PRE FADER INSERT FX and PRE FADER SEND are selected, your audio signal flows as follows: bus effects — bus send — bus pan — bus volume.
- When PRE FADER INSERT FX and POST FADER SEND are selected, your audio signal flows as follows: bus effects — bus pan — bus volume — bus send.
- When POST FADER INSERT FX and PRE FADER SEND are selected, your audio signal flows as follows: bus send — bus pan — bus volume — bus effects.

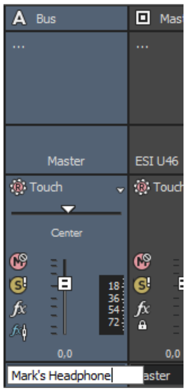
- When POST FADER INSERT FX and POST FADER SEND are selected, your audio signal flows as follows: bus pan — bus volume — bus effects — bus send.

Creating a cue (headphone) mix with the Mixing Console

When you're recording, you'll often need to create separate monitor mixes: the performer in the recording booth may need a slightly different mix than the one you're listening to in the control room. The flexibility of the Mixing Console makes it easy to create custom cue mixes.

When you start a new project, all audio tracks are routed to the master bus. Let's assume that you're using the master bus for your main mix. If you have a sound card with multiple hardware outputs, you can create alternative mixes that you can send to hardware outputs without changing your main mix.

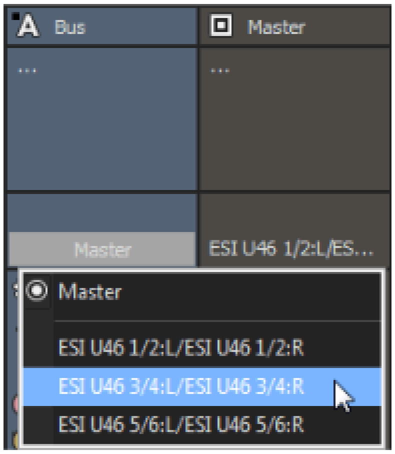
1. First, go to the Audio Device tab in the Preferences dialog and ensure you have a multiple-output device selected in the AUDIO DEVICE TYPE drop-down list.
2. On the Audio tab of the Preferences dialog, clear the TRACK PREFADER SENDS LISTEN TO MUTE check box.
3. If the Mixing Console isn't already visible, choose WINDOW > MIXING CONSOLE from the VIEW menu.
4. First, let's click the INSERT BUS button in the Mixing Console window to create a new bus for our alternative mix.
5. By default, the bus is named Bus A. Let's double-click the bus label and type "Mark's Headphones" in the box to give our bus a more descriptive name.



Mark's Headphone

6. Now we need to route our headphone bus to one of our sound card's outputs.
    a. In the Mixing Console, click the OUTPUT button in the I/O control region on the cue mix bus. A menu is displayed that lists all of our sound card's outputs.

        > **TIP** To show or hide the I/O control region, click the I/O button in the View Controls pane.


A Bus
Master
...
...
Master
ESI U46 1/2:L/ES...
Master
ESI U46 1/2:L/ESI U46 1/2:R
ESI U46 3/4:L/ESI U46 3/4:R
ESI U46 5/6:L/ESI U46 5/6:R

    b. Choose the output where you want to send the headphone mix.
    c. Connect the performer's headphones to the selected output.
7. Now we need to create our headphone mix.
    a. If the Sends control region isn't already visible, click the SENDS button in the View Controls pane. Notice that each track now has a send for MARK'S HEADPHONES (BUS A).

        If you have multiple busses in your project, you can adjust the height of the Sends control region until all sends are visible, or you can click the CHANNEL SEND button for each track and choose MARK'S HEADPHONES (BUS A) from the menu.
    b. Click the PRE/POST in each track's Sends control region to select PRE VOLUME SEND mode. When bus sends are pre-volume, the cue mix is independent of the main mix.

c. Drag the fader on each track's channel strip to adjust the level of the track that is sent to the headphone mix bus. If multiple tracks are selected, you can adjust their bus-send levels at the same time.

   Right-click the bus send fader in the track header in the main application window and choose LINK TO MAIN TRACK PAN from the shortcut menu. When this command is selected, track panning is applied to bus sends (including pan position and panning mode). When LINK TO MAIN TRACK PAN is not selected, the track sends a center-panned stereo signal using the track's current panning mode.

   If you want to exclude a track from the headphone mix, just set its send to -INF.

   You can use the channel strip for the headphone mix bus in the Mixing Console window to adjust the level of the headphone mix, add effects to the mix, or mute and solo the mix.

   If you need to create multiple mixes, you can add up to 26 busses to the Mixing Console window and repeat the procedure described in this topic.

Loudness metering and logging

The Loudness Meters provide data about an audio file's momentary loudness, short-term loudness, integrated (overall) loudness, and loudness range. You can use these values when mastering for broadcast to ensure compliance with loudness standards (such as the CALM Act).

A loudness log is a report of the loudness of an audio file and it allows you to provide documentation that your files adhere to loudness standards.

Generating a loudness log

A loudness log is a report of the loudness of your project, and it allows you to provide documentation that your audio adheres to loudness standards.

The log provides data about a project's momentary loudness, short-term loudness, integrated (overall) loudness, and dynamic loudness. You can use these values when mastering for broadcast to ensure compliance with loudness standards (such as the CALM Act).

Generating a loudness log when rendering a file

1. Use the Render As dialog to save your file.

   For more information, see Rendering your project

2. Click the RENDER OPTIONS button and select the SAVE LOUDNESS LOG NEXT TO MEDIA FILE checkbox if you want VEGAS Pro to analyze the loudness of your file and create a log file that summarizes its loudness values.

   The loudness log is created using the same folder and base name as your sound file with _loud.txt appended to the name.

   The log will record the file name, format, loudness metering mode, and loudness values throughout the file.

   > **IMPORTANT**
   > Loudness logging is performed after the plug-in chain, but before any codec is applied to your rendered file. Because audio compression may affect audio levels, choose TOOLS | GENERATE LOUDNESS LOG to analyze a rendered file after saving to a compressed format.
   >
   > When the MASTER BUS MODE drop-down list on the Audio tab of the Project Properties dialog is set to 5.1 SURROUND, surround processing is applied when measuring loudness (a gain of ~1.5 dB is applied to the left and right surround channels). When the MASTER BUS MODE drop-down list is set to STEREO, all channels contribute equally to the loudness measurement. For more information about loudness values, please see Loudness meters

Generating a loudness log for the timeline

1. Select the data you want to analyze.

   > **TIP** If no data is selected, the entire timeline is analyzed.

2. Choose TOOLS | GENERATE LOUDNESS LOG.

The loudness log is created using the same folder and base name as your project file with _loud.txt appended to the name.

The log will record the file name, format, loudness metering mode, and loudness values throughout the selection or file.

If the OPEN EDITOR WHEN NEW LOUDNESS LOG IS GENERATED checkbox is selected on the Audio tab in the Preferences dialog, the log will be automatically opened in your default text editor.

When the MASTER BUS MODE drop-down list on the Audio tab of the Project Properties dialog is set to 5.1 SURROUND, surround processing is applied when measuring loudness (a gain of ~1.5 dB is applied to the left and right surround channels). When the MASTER BUS MODE drop-down list is set to STEREO, all channels contribute equally to the loudness measurement. For more information about loudness values, please see Loudness meters

Timecode synchronization

VEGAS® Pro can generate MIDI timecode and MIDI clock or be triggered from MIDI timecode. These features allow you to synchronize your VEGAS Pro project with other audio applications and external audio hardware.

Generate MIDI Timecode

From the Options menu, choose TIMECODE, and choose GENERATE MIDI TIMECODE from the submenu if you want to generate MIDI timecode (MTC) when you click PLAY ▶.

MIDI timecode (MTC) is a standard timecode that most applications and some hardware devices will use to synchronize themselves.

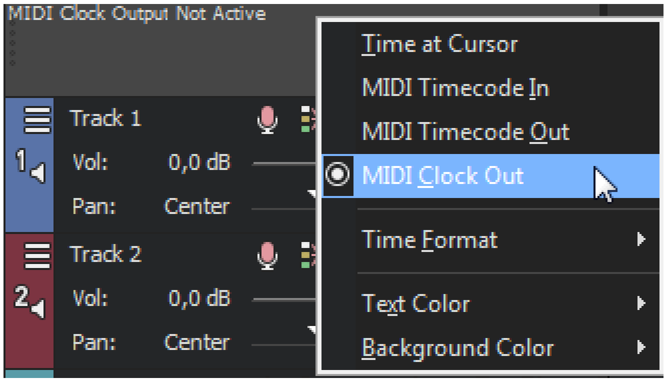
Generating MIDI timecode

1. Specify a MIDI OUTPUT DEVICE to which you will send the timecode and a FRAME RATE for the timecode. These options can be found on the Sync page of the Preferences dialog. ℹ For more information, see Sync Tab
2. From the Options menu, choose TIMECODE, and choose GENERATE MIDI TIMECODE from the submenu.

   VEGAS Pro will generate MTC starting wherever you click PLAY ▶.

Viewing outgoing timecode

To view the outgoing timecode, right-click the Time Display and choose MIDI TIMECODE OUT from the shortcut menu. The text will now display the outgoing MTC time.


MIDI Clock Output Not Active
Track 1
Vol: 0,0 dB
Pan: Center
Track 2
Vol: 0,0 dB
Pan: Center
Time at Cursor
MIDI Timecode In
MIDI Timecode Out
MIDI Clock Out
Time Format
Text Color
Background Color

Generate MIDI Clock

From the Options menu, choose TIMECODE, and choose GENERATE MIDI CLOCK from the submenu if you want to generate MIDI clock when you click PLAY ▶.

MIDI clock differs from MIDI timecode in that it contains tempo as well as positional information. MIDI clock is essentially measured in ticks from the beginning of the project. MIDI clock sends 24 ticks per quarter note, and the tick length is dependent on the MEASURES AND BEATS settings on the Ruler tab of the Project Properties dialog. For more information, see Setting project properties

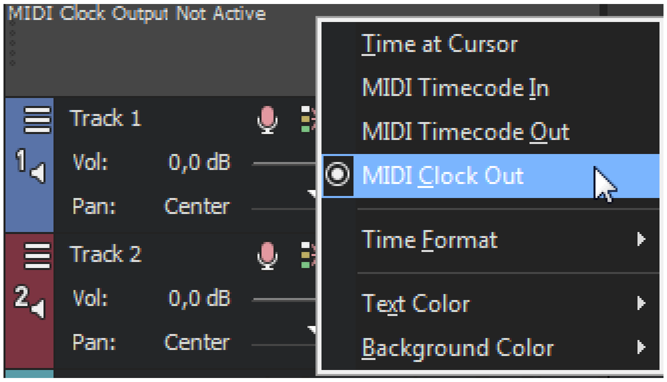
Generating MIDI clock

1. Specify a MIDI OUTPUT DEVICE to which you will send the clock. This option can be found on the Sync page of the Preferences dialog. For more information, see Sync Tab
2. From the Options menu, choose TIMECODE, and choose GENERATE MIDI CLOCK from the submenu.

   VEGAS Pro will generate MIDI clock when you click PLAY ▶.

Viewing outgoing MIDI clock

To view the outgoing clock, right-click the Time Display and choose MIDI CLOCK OUT from the shortcut menu. The text will now display the outgoing MIDI clock time.


MIDI Clock Output Not Active
Track 1
Vol: 0,0 dB
Pan: Center
Track 2
Vol: 0,0 dB
Pan: Center
Time at Cursor
MIDI Timecode In
MIDI Timecode Out
● MIDI Clock Out
Time Format
Text Color
Background Color

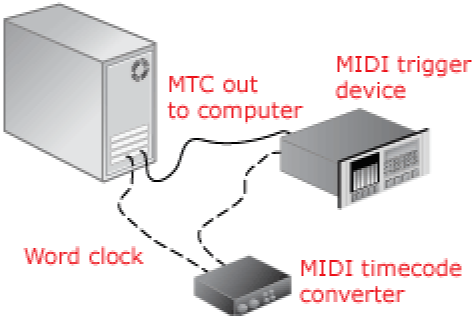
Trigger from MIDI Timecode

From the Options menu, choose TIMECODE, and then choose TRIGGER FROM MIDI TIMECODE from the submenu if you want to initiate VEGAS Pro playback by receiving timecode from another device.

> **NOTE** To update the ruler, right-click the ruler and choose RULER OFFSET or edit the RULER START TIME setting on the Ruler tab of the Project Properties dialog.

Triggering playback from MIDI timecode

1. Connect a word clock signal between your computer and triggering device to lock synchronization.

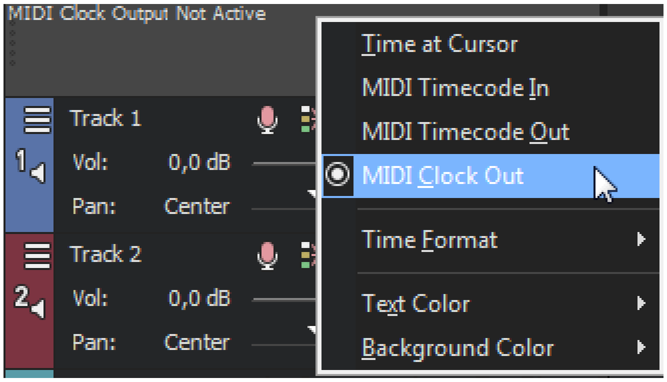


2. Configure your trigger device to send MIDI timecode (MTC) to your computer.
3. Configure VEGAS Pro to receive MTC:
    a. From the Options menu, choose PREFERENCES and select the Sync tab.
    b. From the INPUT DEVICE drop-down list, choose the port from which you will receive MTC.
    c. From the FRAME RATE drop-down list, choose the frame rate that your trigger device will use to send MTC to VEGAS Pro.
    d. From the Options menu, choose TIMECODE, and choose TRIGGER FROM MIDI TIMECODE from the submenu.

    When an incoming MTC signal is received, playback will begin from the position indicated by the timecode. If VEGAS Pro software is not receiving MTC, you can play and edit normally.

Viewing incoming timecode

To view the incoming timecode, right-click the Time Displayand choose MIDI TIMECODE IN from the shortcut menu. The text will now display the incoming MTC time.


MIDI Clock Output Not Active
Track 1
Vol: 0,0 dB
Pan: Center
Track 2
Vol: 0,0 dB
Pan: Center
Time at Cursor
MIDI Timecode In
MIDI Timecode Out
MIDI Clock Out
Time Format
Text Color
Background Color

This display will also show status and error information. If TRIGGER FROM MIDI TIMECODE is enabled but no MTC is detected, the display will show LISTENING... If the wrong frame rate of MTC is being detected the display will show WRONG FORMAT.

Audio effects

Adding audio effects

Adding audio track effects

Track-level DirectX or VST plug-ins are applied to every event on the selected track.

> **TIP** To add effects quickly, you can drag plug-ins and plug-in packages from the Plug-In Manager window to an audio track header. For more information, see Creating and using effects packages and FX chains and The Plug-In Manager WindowThe Plug-In Manager Window

> **IMPORTANT**
> Be aware that using plug-ins (such as Time Stretch, Pitch-Shift without preserving duration, and some Vibrato settings) will cause audio to play out of synchronization with the waveform display in the timeline and with other tracks. If an effects chain includes non-in-place plug-ins, the effects chain icon will be displayed in yellow () to indicate that automatic plug-in delay compensation is being used.
>
> When input monitoring is on during audio recording, plug-in chains that cannot be used for live monitoring are automatically bypassed and are displayed in red (). For more information, see Recording audio

Automating effect parameters

If a plug-in supports it, you can use envelopes to automatically adjust effect parameters over time. Automation envelopes can be added to tracks and bus tracks to control individual effect parameters for track effects, bus effects, and assignable effects.

For more information about using automation envelopes on tracks, see Automating audio effect parameters

When you add a plug-in that supports automation, the BYPASS FX AUTOMATION button is displayed in the Audio Track FX window:

- After you've added effect automation envelopes, the BYPASS FX AUTOMATION button is deselected, and effect parameters are automated using the envelope settings.
- When the button is selected, effect automation envelopes are ignored and the effect's initial state is used for the duration of the track.
- If you delete all automation envelopes from a plug-in, the BYPASS FX AUTOMATION button is unavailable.

TIP

If you're working with a 5.1 surround project, you can use distinct plug-in settings for each channel (separate EQ settings for the front and surround speakers, for example) using effect automation. Add multiple instances of the plug-in to the track effects chain and select the ENABLE check boxes in the FX Automation Chooser for the channels you want each instance of the plug-in to affect. For more information, see [Automating audio effect parameters]()

Adding audio event effects

Event-level DirectX or VST plug-ins are applied only to the event where they are applied.

IMPORTANT

Be aware that using plug-ins (such as Time Stretch, Pitch-Shift without preserving duration, and some Vibrato settings) will cause audio to play out of synchronization with the waveform display in the timeline and with other tracks. If an effects chain includes non-in-place plug-ins, the effects chain icon will be displayed in yellow () to indicate that automatic plug-in delay compensation is being used.

When input monitoring is on during audio recording, plug-in chains that cannot be used for live monitoring are automatically bypassed and are displayed in red ().

Creating an event effects chain

1. Click the EVENT FX button fx on the event in the timeline, or choose TOOLS | AUDIO | AUDIO EVENT FX.

   If there are no effects added to the event, the Plug-In Chooser window appears.

   If there are effects added to the event, the Audio Event FX window appears. Click the PLUG-IN CHAIN button fx to open the Plug-In Chooser.
2. Select each plug-in you want to add and click the ADD button.

The plug-ins appear at the top of the window in the order in which you added them.

> **TIP** To reorder the plug-ins within the chain, simply drag a plug-in button to a new location.

3. Click the OK button.

   The Audio Event FX window appears.

4. Use the settings in the Audio Event FX window to enable/bypass effects, edit effect parameters, and add/remove effects from a chain.

Editing an event effects chain

1. Click the EVENT FX button on the event in the timeline.

   The Audio Event FX window appears.

2. Select an effect button at the top of the window.

   > **TIP** Clear the checkbox to bypass an effect without removing it from the chain.

3. Use the controls in the bottom half of the window to adjust the effect's settings.

For more information, see Editing audio effects

Using bus effects

In addition to assigning effects to individual tracks, you may also apply DirectX and VST effects to busses.

Bus effects will be applied to all tracks assigned to that bus. If a track contains track effects and bus effects, track effects will be processed before the bus effects.

To specify whether the bus level is applied before or after the bus effects chain, do one of the following:

- Click the PRE/POST FADER INSERT FX button / in the Faders control region of the bus channel strip.

- Right-click the fx button in the bus track or bus control and choose POST VOLUME from the shortcut menu if you want to apply the effects chain after the bus volume. This has the same effect as right-clicking the bus output fader and choosing PRE FX from the shortcut menu.

When you're working with 5.1 surround projects, the Master bus supports 5.1-channel audio effects.

TIP
- To add effects quickly, you can drag plug-ins and plug-in packages from the Plug-In Manager window to busses in the Mixing Console window or a bus track header.
- If you want to add effects to all audio in your project, you can add effects to the Master bus.

IMPORTANT When input monitoring is on during audio recording, audio effects chains that contain non-in-place plug-ins are displayed in yellow (fx) to indicate that automatic plug-in delay compensation is being used. Chains that cannot be used for live monitoring are automatically bypassed and are displayed in red (fx).

FURTHER INFORMATION
- Creating a cue (headphone) mix with the Mixing Console
- Bus Channel Strips
- The Plug-In Manager Window

Applying effects to a bus

1. Click the BUS FX button fx located on the bus's audio bus track. The Plug-in Chooser window appears.

> **TIP** You can also use the Insert FX control region in the bus channelstrip to add or edit bus effects.

2. Select each plug-in you want to add and click the ADD button, or browse to an FX package.

> **TIP** To reorder the plug-ins within the chain, simply drag a plug-in button to a new location.

3. When you have finished adding the plug-ins, click the OK button.

FURTHER INFORMATION

- Audio bus tracks
- Bus Channel Strips

Editing effects on a bus

1. Click the BUS FX button fx located on the audio bus track. If the bus has an effects chain, the Bus FX window is displayed.
2. Use the Bus FX window to enable/bypass effects, edit effect parameters, and add/remove effects from a chain.

> **TIP** You can also use the Insert FX control region in the bus channel strip to add or edit bus effects.

FURTHER INFORMATION

- Editing audio effects
- Bus Channel Strips

Automating effect parameters

If a plug-in supports it, you can use envelopes to automatically adjust effect parameters over time. Automation envelopes can be added to tracks and bus tracks to control individual effect parameters for track effects, bus effects, and assignable effects.

When you add a plug-in that supports automation (effects that can be automated are indicated by the icon in the Plug-In Chooser), the BYPASS FX AUTOMATION button is displayed in the Bus FX window:

- After you've added effect automation envelopes, the BYPASS FX AUTOMATION button is deselected, and effect parameters are automated using the envelope settings.
- When the button is selected, effect automation envelopes are ignored and the effect's initial state is used for the duration of the track.
- If you delete all automation envelopes from a plug-in, the BYPASS FX AUTOMATION button is unavailable.

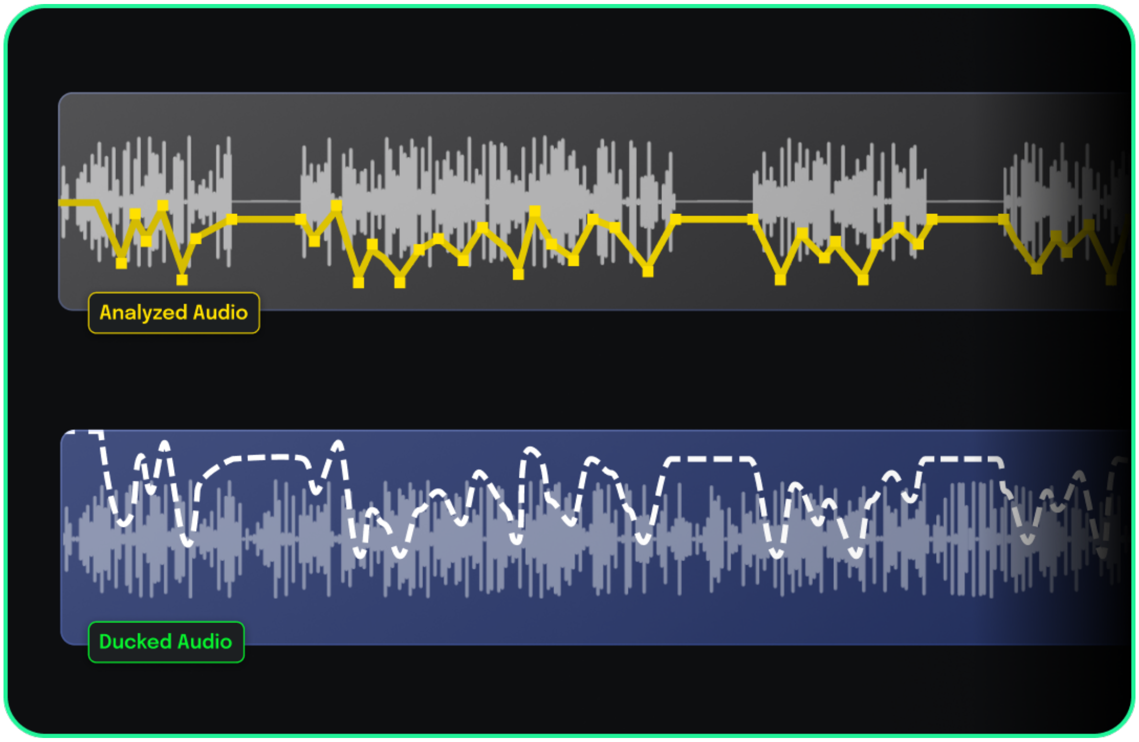
FURTHER INFORMATION

- Automating audio effect parameters

Auto Ducking

Auto Ducking is a feature in VEGAS Pro that allows you to automatically reduce the volume of one or more audio tracks (referred to as "listener" tracks) based on the presence of audio in other tracks (referred to as "controller" tracks). This feature is particularly useful in scenarios where you need background music to "duck" or lower in volume when narration or dialogue is playing.

This feature creates a control envelope on the controller track, which adjusts the volume of the listener track(s) based on the controller's audio. You can create simple hard ducks or sophisticated volume changes depending on the parameters you set.

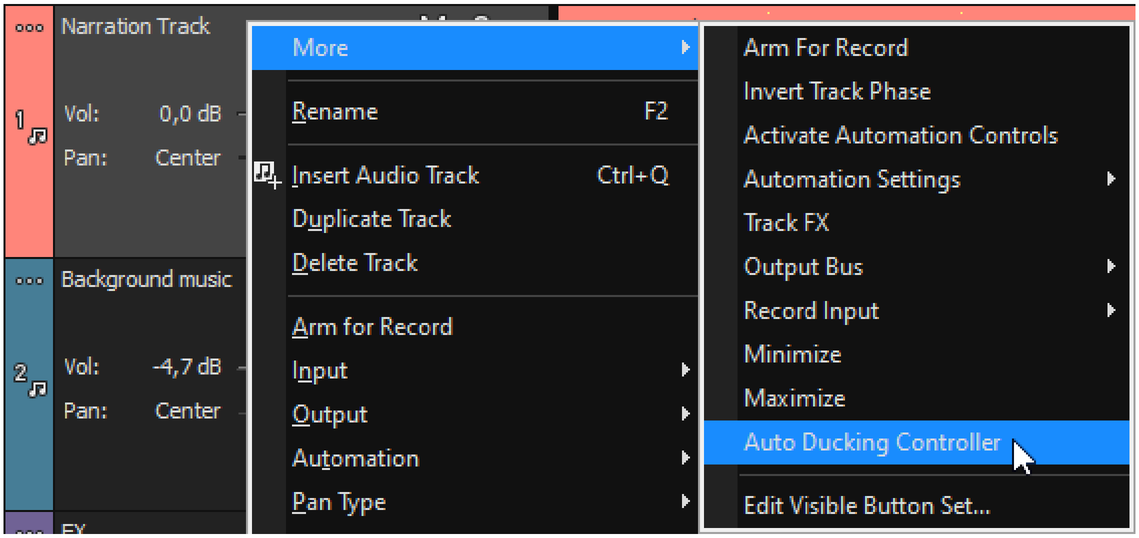


USE CASES

- Automatically lower the volume of background music when narration or a voiceover starts.
- Control the volume dynamics between dialogue tracks and background ambiance or effects.
- Ensure audio clarity by automatically ducking the volume of non-essential audio during key moments of narration.
- Use Auto Ducking to enhance pulsing sound effects in a mix, making sure they stand out by reducing other sounds when the pulse occurs.
- In music production, use Auto Ducking to lower the volume of bass instruments or low-frequency sounds when a kick drum plays, ensuring the drum remains clear in the mix.

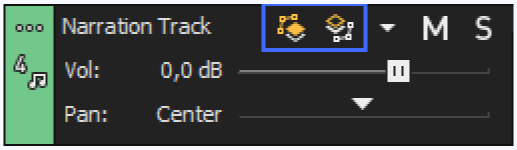
Ducking Music for Narration

1. Set Up the Audio Tracks
   - Set up your project with narration on one track and background music on another track so that both audio tracks play simultaneously.
   - Add several different narration events to the narration track and leave some space between each of them.
   - Adjust the music so that there is a bit of space at the beginning where the music plays without the narration having started, and at the end where the music continues to play after the narration stops.
2. Enable Auto Ducking
   - Right-click on the Track List and select MORE | AUTO DUCKING CONTROLS to open the Auto Ducking dialog.


Narration Track
1
Vol: 0,0 dB
Pan: Center
Background music
2
Vol: -4,7 dB
Pan: Center
FX
More
Rename F2
Insert Audio Track Ctrl+Q
Duplicate Track
Delete Track
Arm for Record
Input
Output
Automation
Pan Type
Arm For Record
Invert Track Phase
Activate Automation Controls
Automation Settings
Track FX
Output Bus
Record Input
Minimize
Maximize
Auto Ducking Controller
Edit Visible Button Set...

This designates the narration track as the "controller" track.

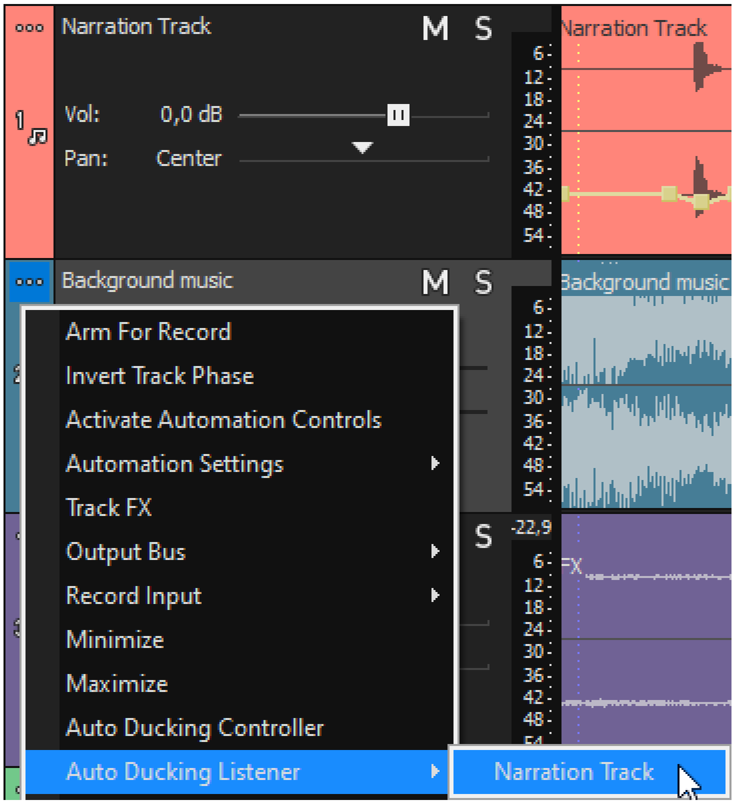
This will create a new Auto Ducking control envelope that adjusts the volume of the background music track based on the volume of the narration.

> **TIP**
>
> To see the Auto Ducking controls more easily, right-click on the Track List, select MORE, and enable the AUTO DUCKING CONTROLS from the Visible Button Set menu.
>
> 
>

Narration Track
> M S
> 4
> Vol: 0,0 dB
> Pan: Center

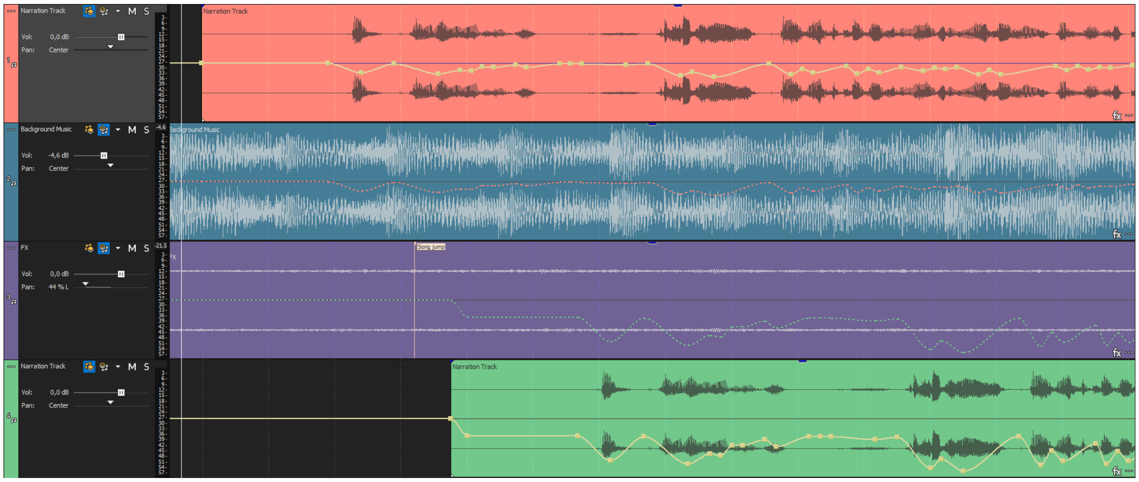
3. Adjust the Auto Ducking Envelope
    - Set the FLOOR REDUCTION slider to the level you want to reduce the music volume (e.g., -12 dB).
    - Set the PEAK REDUCTION slider to 0% initially, so it doesn't affect volume peaks. You can adjust this later if needed.
4. Designate the Music Track as a “Listener” Track

- Click the MORE ⋯ button on the music track and choose Auto Ducking Listener to assign it as the “listener.” Now, the music track’s volume will react to the ducking envelope on the narration track.


Narration Track
M
S
Vol:
0,0 dB
Pan:
Center
Background music
Arm For Record
Invert Track Phase
Activate Automation Controls
Automation Settings
Track FX
Output Bus
Record Input
Minimize
Maximize
Auto Ducking Controller
Auto Ducking Listener
Narration Track

A new dotted-line envelope appears on the music track to visually represent the volume adjustments according to the narration events.

5. Test and Fine-Tune the Auto Ducking Effect
    - Play your project to hear the ducking effect in action. You can adjust the parameters of the Auto Ducking envelope to customize the level and sensitivity of the ducking effect.
    - To adjust the Auto Ducking effect for individual events, right-click on an event in the controller track and choose RE-ANALYZE AUTO DUCKING. You can then adjust the Floor Reduction or Peak Reduction for that specific event to customize the ducking effect.


Narration Track
M
S
Background Music
FX
Song jump
Narration Track
fx

Vol: 0,0 dB
Pan: Center

Vol: -4,6 dB
Pan: Center

Vol: 0,0 dB
Pan: 44 % L

Vol: 0,0 dB
Pan: Center

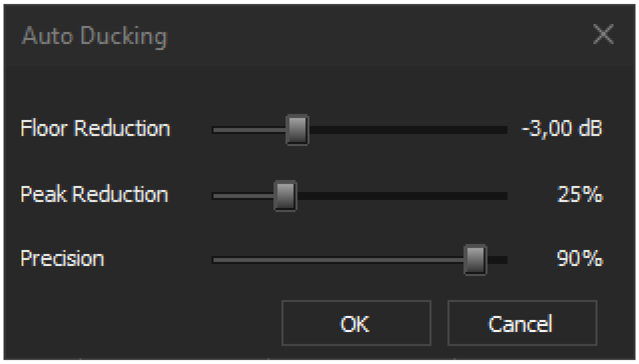
NOTE
Envelope Response Time

If the listener envelope updates slower than expected, remember that the envelope refreshes after the mouse is moved off the control. This slight delay ensures that the system is not overloaded during the adjustment phase.

EXAMPLE

- In a musical context, if for example, you have a bass guitar, an organ with low notes, and a piano with low notes in your mix, they could all exist in relatively the same frequency space as your kick drum. Thus, the kick drum could get buried in the mushy low-end. In such a case, make the kick drum track an auto ducking control track and assign each of those other tracks as listeners so that they “get out of the way” of each kick drum hit.
- While this might not make sense in the case where you simply want to duck the music out of the way of the narration, you can use this technique creatively to enhance different types of audio mixes. For instance, say your audio soundtrack has a repeating pulsing sound, like some sort of sci-fi engineroom noise or something. Such a pulsing sound could get “lost in the mix” of other audio in the soundtrack. In a case like that, you could use the pulsing sound as the auto ducking generator and assign other audio tracks as listeners. In this way, you could automate your mix so that every time the pulsing sound happens, other audio quickly ducks down to enable the pulse to more effectively shine through the mix.

Dialog Description



Auto Ducking

Floor Reduction -3,00 dB

Peak Reduction 25%

Precision 90%

Dialog Element	Description
Floor Reduction Slider	Controls the minimum volume level (in dB) that the audio will duck to. A common setting is around –12dB for narration.

Dialog Element	Description
Peak Reduction Slider	Determines how much the volume should respond to peaks in the controller track's audio. Higher percentages create more dynamic ducking based on the controller track’s loudness.

Peak Reduction and Advanced Ducking

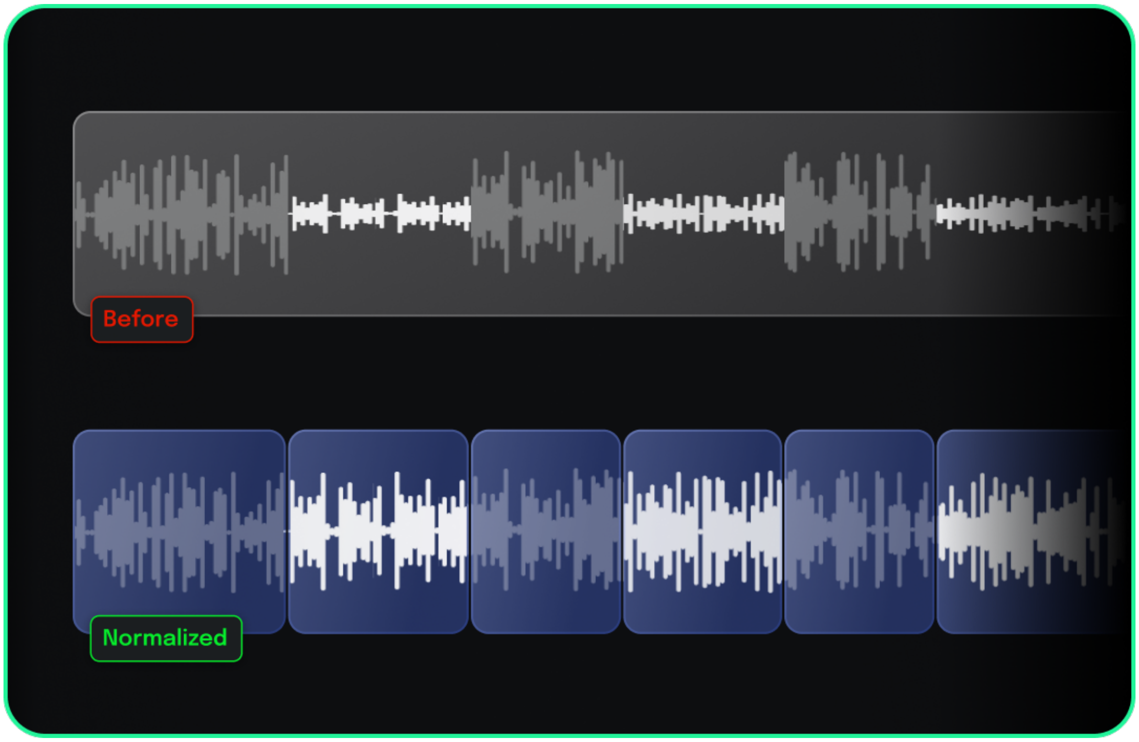
While Floor Reduction sets a fixed volume level for ducking, Peak Reduction offers more dynamic control. By setting the Peak Reduction slider, the listener track reacts more to the loudness of individual peaks in the controller track. This can be useful for complex mixes, such as ensuring that kick drums or pulsing sounds stand out in a soundtrack by automatically ducking other tracks in response to these peaks.

FURTHER INFORMATION

- Audio Editing
- Adding audio effects

Auto Normalize

The Auto Normalize function in VEGAS Pro is designed to automatically recalculate the audio normalization for an event after edits are made. This feature ensures that any audio event is normalized based on the remaining audio after trimming, splitting, or other edits, without requiring manual renormalization. Whether you're cutting sections of an audio clip or removing high peaks, the audio that remains will automatically adjust to maintain consistent levels.



USE CASES

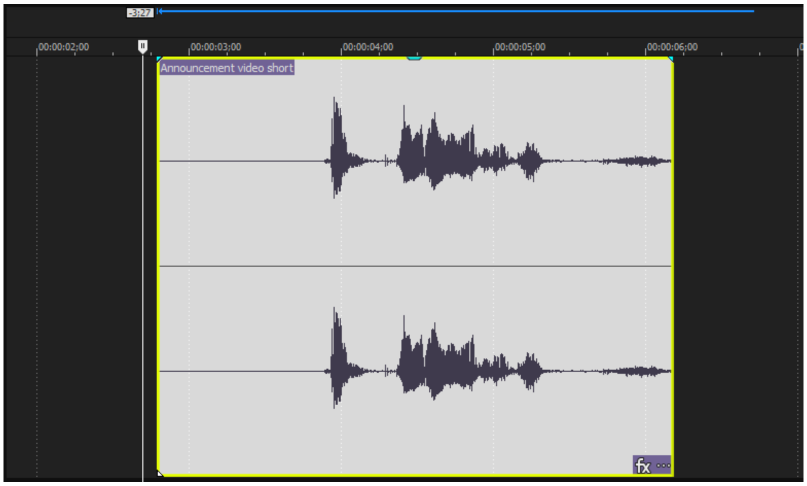
- Use Auto Normalize to quickly adjust different audio tracks to the same level in a multi-track project.
- Normalize audio recorded from different sources to ensure volume consistency.
- Automatically prevent audio distortion caused by peaks in loudness.

Traditionally, when you split or trim an audio event with normalization applied, the normalization would remain unchanged, potentially leading to uneven volume levels. However, with Auto Normalize active, VEGAS Pro recalculates the normalization for all resulting segments, ensuring that each portion is adjusted based on its unique audio content. This means you can edit with confidence, knowing that the audio levels will automatically update, saving you the time of renormalizing manually after each change.

The Auto Normalize function operates alongside the traditional Normalize switch and can be easily activated in your project. For the best results, apply this feature to audio clips with a noticeable mix of loud and quiet sections. By trimming or splitting these clips, you'll see how the software dynamically adjusts the audio levels to ensure consistent volume across the event.

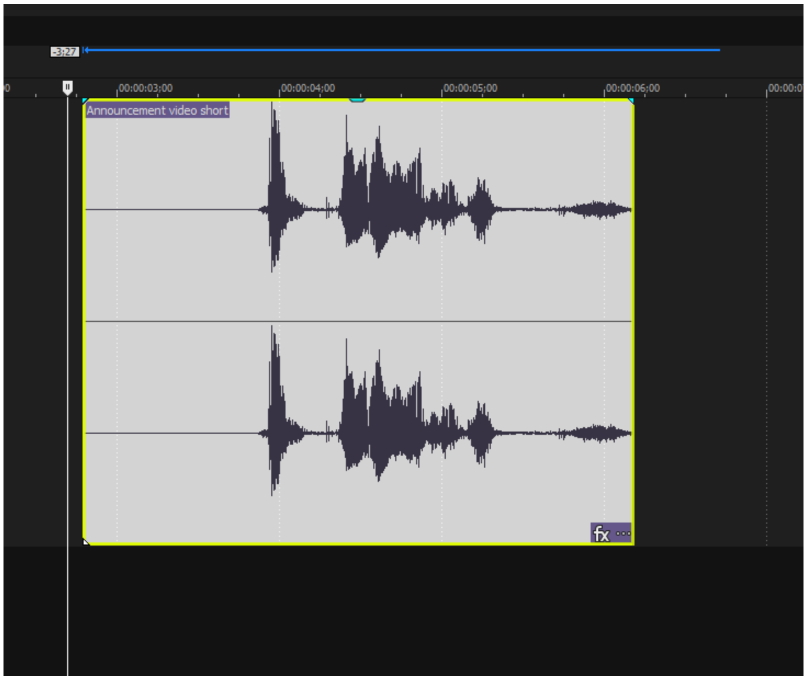
How to Use Auto Normalize

1. Add an audio file to your project. Choose a file with varying audio levels for the best demonstration of the feature.


-3;27
00:00:02;00
00:00:03;00
00:00:04;00
00:00:05;00
00:00:06;00
Announcement video short
fx

2. Right-click the event that holds the audio and select **Switches | Auto Normalize** from the context menu.

   The audio in the event will be normalized, adjusting the volume levels automatically.



Perform edits, such as trimming or splitting the audio. The normalization recalculates based on the remaining audio content.

Splitting an Event into Multiple Events

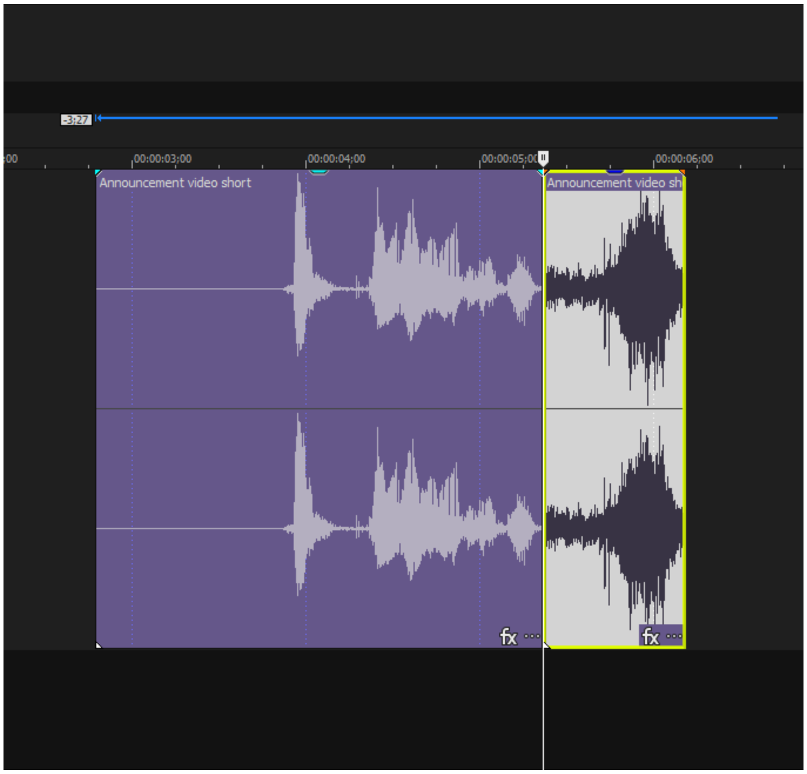
1. Click on the audio event you want to split.
2. Move the cursor to the transition point between the loud and quiet sections of the audio.

   Ensure the loud part is on the left side of the cursor and the quiet part is on the right.
3. Press S on your keyboard to split the event at the cursor's position.

   After splitting, Auto Normalize will automatically recalculate the normalization for both resulting events.

   You may not see changes in the loud section, but the waveforms in the quiet section will adjust, growing larger as the volume is normalized.

By following these steps, you'll see how Auto Normalize helps balance the volume between loud and quiet parts of an audio clip after splitting.


-3:27
00:00:03:00
00:00:04:00
00:00:05:00
00:00:06:00
Announcement video short
Announcement video sh
fx

TIP
Additional Methods to Engage Auto Normalize

You can also enable Auto Normalize through the following methods:

- Using the **Edit** menu.
- Within the **Event Properties** dialog box.
- Via the **Edit Details** window.

Disengaging Auto Normalize

1. Right-click the event or access it through the menu where Auto Normalize is enabled.
2. Deselect the AUTO NORMALIZE checkbox or menu option to disable the feature.

Setting Default Normalization Levels

1. Go to **Options | Preferences** to open the Preferences dialog box.
2. Navigate to the **Audio** tab.
3. In the **Normalize peak level (dB)** field, enter the desired value for normalization.
4. Click **OK** to apply the settings. This affects both the Auto Normalize and the traditional Normalize functions.

Applying non-real-time event effects

Most processing in VEGAS Pro is nondestructive: editing events and adding effects does not modify your source media.

You can use non-real-time event effects to add effects to an event and render a new media file that includes the processed audio. Non-real-time effects are useful for large projects or for processor-intensive plug-ins.

> **TIP** To add effects quickly, you can drag plug-ins and plug-in packages from the Plug-In Manager window to an event in the timeline. For more information, see The Plug-In Manager Window

1. Select the event that contains the take you would like to process.
2. From the Tools menu, choose AUDIO, then APPLY NON-REAL-TIME EVENT FX. The Plug-Ins Chooser dialog appears.
3. Select each plug-in you want to add and click the ADD button.

   > **TIP** To reorder the plug-ins within the chain, simply drag a plug-in button to a new location.

4. Click the OK button. The Take dialog box is displayed with the settings for the first plug-in of the chain.

5. Adjust the settings for each effect. Click the help button within the FX window for information about each plug-in's settings. You can preview the processed audio by clicking the PREVIEW button ▶.
6. When you have finished adjusting the effect settings, click the OK button. The Apply Non Real-Time FX dialog appears.
7. Specify a file name and format for the new media file.
8. Click the RENDER button. After processing, a new file is added to the Project Media window and a new take is added to the event. ℹ For more information, see Using takes as alternate versions of events

Using assignable effects

You can use assignable effects chains when you want to route multiple tracks to a chain of DirectX or VST plug-ins while setting the level for each track independently.

You can add up to 32 assignable effects chains to the Mixing Console window. Each chain can have up to 32 plug-ins.

> **IMPORTANT** When input monitoring is on during audio recording, audio effects chains that contain non-in-place plug-ins are displayed in yellow (fx) to indicate that automatic plug-in delay compensation is being used. Chains that cannot be used for live monitoring are automatically bypassed and are displayed in red (fx).

Adding an assignable effects chain

From the Insert menu, choose AUDIO ASSIGNABLE FX (or click the INSERT ASSIGNABLE FX button fx in the Mixing Console toolbar) to create an effects chain to which you can route tracks in your project.

You can create up to 32 assignable effects chains in your project, and each chain can contain up to 32 effects.

> **TIP** To add effects quickly, you can drag plug-ins and plug-in packages from the Plug-In Manager window to the Mixing Console window. Drop on an existing assignable effects control to add plug-ins to the chain. For more information, see [The Plug-In Manager Window]

> **IMPORTANT** When input monitoring is on during audio recording, audio effects chains that contain non-in-place plug-ins are displayed in yellow () to indicate that automatic plug-in delay compensation is being used. Chains that cannot be used for live monitoring are automatically bypassed and are displayed in red ().

Creating an assignable effects chain

1. From the Insert menu, choose AUDIO ASSIGNABLE FX. The Plug-In Chooser window appears.
2. Click each plug-in you want to add, and click the ADD button, or browse to an effects package. The plug-ins appear at the bottom of the window in the order in which you added them.

   > **TIP** To reorder the plug-ins within the chain, simply drag a plug-in button to a new location, or click the MOVE PLUG-IN LEFT or MOVEPLUG-IN RIGHT buttons.

3. Once you have added all of the plug-ins and specified the plug-in chain order, click the OK button. The new chain is added to the Mixing Console window, and the Assignable FX window appears.
4. Adjust the settings for the effects. For more information about using specific plug-ins, click the PLUG-IN HELP button ?.

When you create an assignable effects chain for your project, the REMOVE ASSIGNABLE FX command is enabled on the Tools | Audio submenu so you can delete a chain from the project.

> **TIP** If the Mixing Console window is visible, click the INSERT ASSIGNABLE FX button in the toolbar. For more information, see The Mixing Console Window

Editing an assignable effects chain

1. Click the ASSIGNABLE FX button located on the effect chain's audio bus track.

   For more information, see Audio bus tracks

   The Assignable FX window is displayed.
2. Use the Assignable FX window to enable/bypass effects, edit effect parameters, and add/remove effects from a chain. For more information, see Editing audio effects

> **TIP** If the Mixing Console Window is visible, you can use the Insert FX control region in the assignable effects channel strip to edit the assignable effects chain. For more information, see "FX Send (Assignable Effects) Channel Strips."

Deleting an assignable effects chain

When you remove an assignable effects chain, it is deleted from the project. You must recreate the chain if you want to use it again. If you want to keep the chain, but do not want to use it in your current project, you may save the chain as a preset. For more information, see Creating and using effects packages and FX chains

> **TIP** To bypass an assignable effects chain without removing it from the project, select the MUTE button in the Faders control region of the assignable effects channel strip. For more information, see "FX Send (Assignable Effects) Channel Strips."

Right-click an assignable effects channel strip in the Mixing Console window and choose DELETE from the shortcut menu, or select an assignable effects channel strip and press the Delete key.

Automating effect parameters

If a plug-in supports it, you can use envelopes to automatically adjust effect parameters over time. To automate assignable effects, add automation envelopes to the assignable effect's audio bus track. For more information, see [Audio bus tracks]

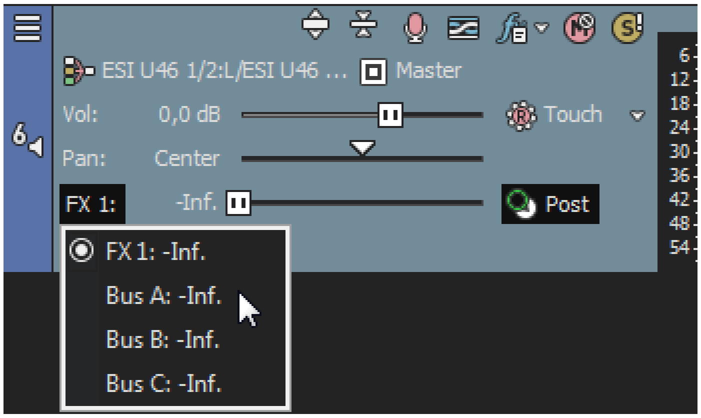
For more information about automating effect parameters, see [Automating audio effect parameters]

Routing tracks to an assignable effects chain

Routing tracks to an assignable effects chain allows you to assign multiple tracks to a plug-in chain.

> **NOTE** In order to route tracks to an assignable effects chain, you must first add an assignable effects chain to your project. For more information, see [Adding an assignable effects chain]

1. Click the label on the multipurpose slider and choose the desired assignable effects chain from the menu. The button name changes to reflect the name of the selected chain.



> **NOTE** If you can't see themultipurpose fader, drag the bottom edge of the track header to increaseits height.

2. Drag the fader to adjust the level of the track sent to the assignable effects chain.

   If you set the DRY OUT faders in your effects chain to -inf, you can adjust the wet/dry balance using the VOLUME fader Faders control region of the assignable effects channel strip. For more information, see "FX Send (Assignable Effects) Channel Strips."

> **TIP**
>
> - If the Mixing Console Window is visible, you can use the Sends control region in the audio track channel strip to send a track to an assignable effects chain. For more information, see Audio Track Channel Strips
> - FX sends are post-volume by default. To change to pre-volume, right-click the FX fader and choose PRE VOLUME from the shortcut menu.
> - If you want to apply track panning (including pan position and panning mode) to FX sends, right click the FX fader and choose LINK TO MAIN TRACK PAN from the shortcut menu. For more information, see Audio panning modes
>
>   When LINK TO MAIN TRACK PAN is not selected, the track sends a center-panned stereo signal using the track's current panning mode.
> - Select the USE LEGACY TRACK SEND GAIN checkbox on the Audio page of the Preferences dialog if you want to configure audio track sends to behave as they did in VEGAS Pro 7.0 and earlier. When the checkbox is selected, you can open projects created with earlier versions of VEGAS Pro and be assured they will sound the same as they did in earlier versions of VEGAS Pro.

Using assignable effects envelopes

Assignable effects envelopes allow you to change the level of a track sent to an assignable effects chain over time.

For more information, see [Using assignable effects]() and [Audio track automation]()

Removing an assignable effects chain

When you remove an assignable effects chain, it is deleted from the project. You must recreate the chain if you want to use it again. If you want to keep the chain, but do not want to use it in your current project, you may save the chain as a preset. For more information, see [Creating and using effects packages and FX chains]()

> **TIP** To bypass an assignable effects chain without removing it from the project, select the MUTE button in the Assignable FX Control.

1. In the Mixing Console window, select the assignable effects chain you want to remove (to select multiple chains, hold down the Ctrl key while selecting).
2. Right-click a selected chain and choose DELETE from the shortcut menu (or press Delete). The effects chains are removed from your project.

Bypassing all audio effects

From the Options menu, choose BYPASS ALL AUDIO FX to omit all audio effects (track, bus, and assignable effects) during playback.

Bypassing effects allows you to quickly compare your project with and without effects and conserve processing power to avoid playback problems.

> **TIP** When effects are bypassed, you can choose whether bypassed effects remain open. When the KEEP BYPASSED FX RUNNING checkbox on the General tab of the Preferences dialog is selected, effects remain open so you can bypass/enable effects with no pause for A/B testing. When the checkbox is cleared, effects are fully bypassed, conserving processing power.

Editing audio effects

Audio effect settings are displayed when you click the button on a track, bus, or assignable FX control.

Use the effects window to enable/bypass effects, edit effect parameters, add/remove DirectX and VST effects from tracks, busses, and assignable FX chains, edit effect parameters, and configure effects automation.

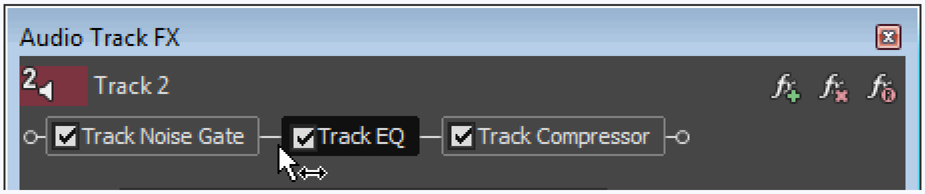
> **NOTE** If no effects have been added to a track or bus, the button is displayed in gray . Click the button to display the Plug-In Chooser, where you can select the plug-ins you want to use.

> **TIP**
> - To move faders and sliders in fine increments, hold `Ctrl` while dragging the control.
> - Double-click the title bar of the audio effects window to resize the window for the current plug-in.

Enabling or bypassing effects

Select the checkbox for each plug-in you want to apply or clear a checkbox to bypass an effect without removing it from the chain.

> **TIP**
> The effect of plug-ins on a chain is cumulative, so you may need to rearrange the plug-ins so that one plug-in's processing does not adversely affect other plug-ins in the chain. To reorder the plug-ins within the chain, drag a plug-in button to a new location.



> **TIP** You can bypass or enable all plug-ins by right-clicking the fx button in the track list and choosing ENABLE ALL or BYPASS ALL from the shortcut menu.

Editing effect parameters

Click the plug-in's button to select it, and use the bottom half of the window to adjust the effect's parameters. For more information about using specific plug-ins, click the PLUG-IN HELP button ?.

Adding or removing effects

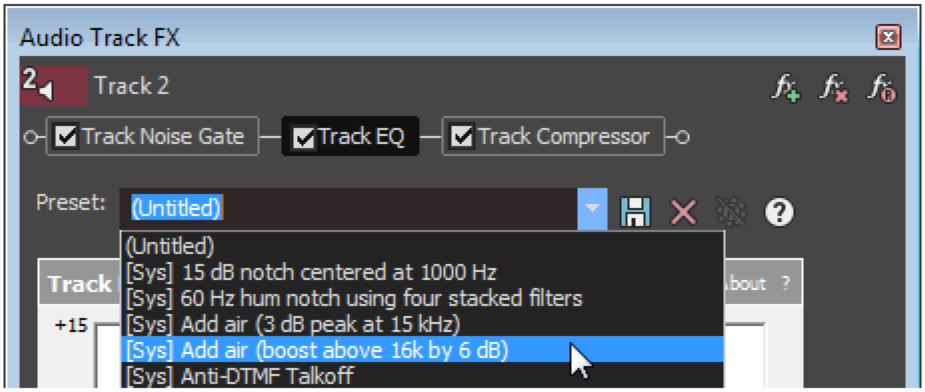
1. Click the PLUG-IN CHAIN button fx to display the Plug-In Chooser.
2. Select a plug-in button, and then click the ADD or REMOVE button. The modified chain is displayed at the top of the window.
    - Effects that can be automated are indicated by the icon in the Plug-In Chooser.
    - VST plug-ins are indicated by the VST icon in the Plug-In Chooser.
    - If you select a plug-in package, that chain will replace the current chain.
3. Click the OK button.

> **TIP**
> - You can bypass, enable, or delete all plug-ins in the chain by right-clicking the fx button in the track list.
> - You can remove a plug-in from the chain by selecting a plug-in and clicking the REMOVE SELECTED PLUG-IN button fx.

Loading a plug-in preset

Loading a preset for an individual DirectX plug-in

Choose a setting from the PRESET drop-down list. The plug-in settings stored in the preset are loaded.


Audio Track FX
2
Track 2
Track Noise Gate
Track EQ
Track Compressor
Preset:
(Untitled)
(Untitled)
[Sys] 15 dB notch centered at 1000 Hz
[Sys] 60 Hz hum notch using four stacked filters
[Sys] Add air (3 dB peak at 15 kHz)
[Sys] Add air (boost above 16k by 6 dB)
[Sys] Anti-DTMF Talkoff
Track
+15
bout ?

Loading a preset for an individual VST plug-in

1. Click the OPEN VST PRESET button.
2. The Open VST Preset dialog is displayed.
3. Browse to the .fxp file that you want to use.
4. Click the OPEN button.
5. The current VST preset is replaced with the settings stored in the .fxp file.

Loading a bank of VST plug-in presets

1. Click the OPEN VST BANK button.
2. The Open VST Preset Bank dialog is displayed.
3. Browse to the .fxb file that you want to use.

4. Click the OPEN button.
5. All presets for the current VST plug-in are replaced with the settings stored in the .fxb file, and the first preset in the bank is loaded by default.

Creating or deleting a preset

Saving a preset for an individual DirectX plug-in

1. Adjust the settings for the plug-in.
2. Type a name in the PRESET box.
3. Click the SAVE PRESET button 💾. The settings for the current plug-in are saved.

Saving a preset for an individual VST plug-in

1. Type a name in the PRESET box.
2. Click the SAVE VST PRESET AS button 💾.
3. The Save VST Preset dialog is displayed.
4. Browse to the folder where you want to save the .fxp file and type a name in the FILE NAME box.
5. Click the SAVE button. The current plug-in settings are saved in the .fxp file.

Saving a bank of VST plug-in presets

1. Click the SAVE VST BANK AS button 💾.

   The Save VST Preset Bank dialog is displayed.
2. Browse to the folder where you want to save the .fxb file and type a name in the FILE NAME box.
3. Click the SAVE button. All presets for the current plug-in are stored in the bank.

Delete a preset

Choose a preset from the PRESET drop-down list and click the DELETE button ×.

> **NOTE**
> - You cannot delete built-in presets.
> - VST plug-in settings are loaded or saved using .fxp and .fxb files as described above. Individual presets and banks cannot be deleted from this window.

Automating effect parameters

If a plug-in supports it, you can use envelopes to automatically adjust effect parameters over time. Automation envelopes can be added to tracks and bus tracks to control individual effect parameters for track effects, bus effects, and assignable effects.

For more information about using automation envelopes on tracks, see Automating audio effect parameters

When you add a plug-in that supports automation (effects that can be automated are indicated by the icon in the Plug-In Chooser), the BYPASS FX AUTOMATION button is displayed in the window:

- After you've added effect automation envelopes, the BYPASS FX AUTOMATION button is deselected, and effect parameters are automated using the envelope settings.
- When the button is selected, effect automation envelopes are ignored and the effect's initial state is used for the duration of the track.
- If you delete all automation envelopes from a plug-in, the BYPASS FX AUTOMATION button is unavailable.

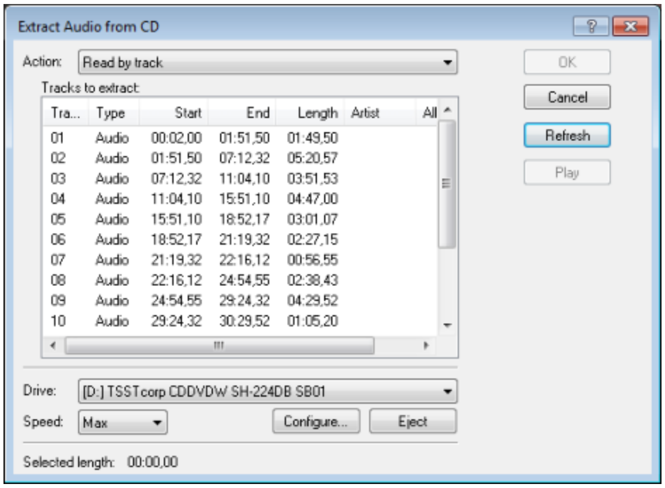
Extracting audio from CDs

From the File menu, choose EXTRACT AUDIO FROM CD to extract tracks from a CD and open them as events in your VEGAS Pro project.

> **TIP** Double-click a .cda file in the Explorer window (or drag it to the timeline) to extract a CD track without opening the Extract Audio from CD dialog.

> **IMPORTANT** VEGAS Pro software is not intended, and should not be used for, illegal or infringing purposes, such as the illegal copying or sharing of copyrighted materials. Using VEGAS Pro for such purposes is, among other things, against United States and international copyright laws and contrary to the terms and conditions of the End User License Agreement. Such activity may be punishable by law and may also subject you to the breach remedies set forth in the End User License Agreement.

1. From the File menu, choose EXTRACT AUDIO FROM CD (or click the EXTRACT AUDIO FROM CD button on the Project Media window). The Extract Audio from CD dialog is displayed.



Action: Read by track

Tracks to extract:

Tra...	Type	Start	End	Length	Artist	All
01	Audio	00:02,00	01:51,50	01:49,50		
02	Audio	01:51,50	07:12,32	05:20,57		
03	Audio	07:12,32	11:04,10	03:51,53		
04	Audio	11:04,10	15:51,10	04:47,00		
05	Audio	15:51,10	18:52,17	03:01,07		
06	Audio	18:52,17	21:19,32	02:27,15		
07	Audio	21:19,32	22:16,12	00:56,55		
08	Audio	22:16,12	24:54,55	02:38,43		
09	Audio	24:54,55	29:24,32	04:29,52		
10	Audio	29:24,32	30:29,52	01:05,20		

Drive: [D:] TSSTcorp CDDVDW SH-224DB SB01

Speed: Max

Selected length: 00:00,00

2. Choose a setting from the ACTION drop-down list to indicate how you want to extract audio:

Item	Description
Read by track	Choose to extract individual CD tracks. Select the tracks you want to extract in the TRACKS TO EXTRACT list. Each CD track is extracted to a new track in your project.
Read entire disc	Choose to extract the current CD to a single file. The disc is extracted to a new track in your project.
Read by range	Choose to extract a time range. You can specify a starting time and ending time (or a starting time and length). The time range is extracted to a new track in your project.

3. If you choose READ BY TRACK or READ BY RANGE from the ACTION drop-down list, select the tracks or time range you want to extract.

> **NOTE** Click PLAY to preview your selection. In order to preview, your CD drive's audio output must be connected to your sound card, or you can connect headphones to the front of the CD drive.

4. From the DRIVE drop-down list, choose the drive that contains the CD from which you want to extract audio.
5. From the SPEED drop-down list, choose the rate at which you want to extract audio. If you experience gapping or glitching, decrease the speed or click CONFIGURE and adjust the AUDIO EXTRACT OPTIMIZATION slider.
6. Click OK to start extracting audio.
7. Type a file name and choose a location for the file.

   The extracted files are added to the Project Media window when extraction is complete.

Exporting and sharing projects

When you're finished editing your VEGAS® Pro project—or when you want to see it in its final form—you can use the Render As dialog to convert your project to another format and create a single file on your hard drive.

» Video Codec Overview

From the File menu, choose RENDER AS to display the Render As dialog.

When you're finished editing your VEGAS® Pro project—or when you want to see it in its final form—you can use the SAVE IT TO MY HARD DRIVE destination in the Make Movie wizard save your project as a single file on your hard drive.

If you need access to more rendering options, click the ADVANCED OPTIONS button to open the Render As dialog.

> **TIP**
> When you render your project, the project file is not affected (overwritten, deleted, or altered) during the rendering process. You may return to the original project to make edits or adjustments and render it again.
>
> If you've prerendered your project, those prerendered sections can be used for your final render when the destination formats match. For more information, see Selectively prerender video

> **IMPORTANT** When you route busses to hardware outputs, the outputs from those busses will not be included in the mix when you render your project. For more information, see Routing busses

Rendering your project

Rendering creates a final version of your project that you can export and share. The **Render** dialog lets you select output formats, apply presets, and customize export settings. It features a streamlined layout with tree-based navigation and use case–oriented categories to help you find the right option quickly.

Use rendering when you finish editing and want to publish your project for platforms such as YouTube, social media, or archival storage.

USE CASES

- Export a finished video for YouTube and other social platforms.
- Create a high-quality master for archiving or further editing.
- Deliver audio-only files for podcast or music distribution.

How to render a project

PREREQUISITE

- Save your project before you render.
- Some formats may require additional codecs or plug-ins.
- To access all available formats, enable SHOW ALL FORMATS.

1. Go to FILE menu and click RENDER.
2. Use the FOLDERtext box to choose where to save.
    - Click BROWSE to specify a new folder.
    - Use the drop-down to select a recent folder.
    - Click PROJECT LOCATION to jump to the project's folder.
3. In the NAME box, enter a file name or select an existing file to overwrite.

4. Use the left-side **tree navigation** to select a category.

   > **TIP** Use FILTERS and enable MATCH PROJECT SETTINGS to display only compatible templates. For more information, see Filters and matching

   > **TIP** Use SEARCH to quickly filter presets (for example, type “Internet”).

   > **TIP** Mark templates as FAVORITES and select FAVORITES.

5. Select a format to view available TEMPLATES. Optionally click CUSTOMIZE TEMPLATE to adjust resolution, frame rate, bitrate, and audio settings.

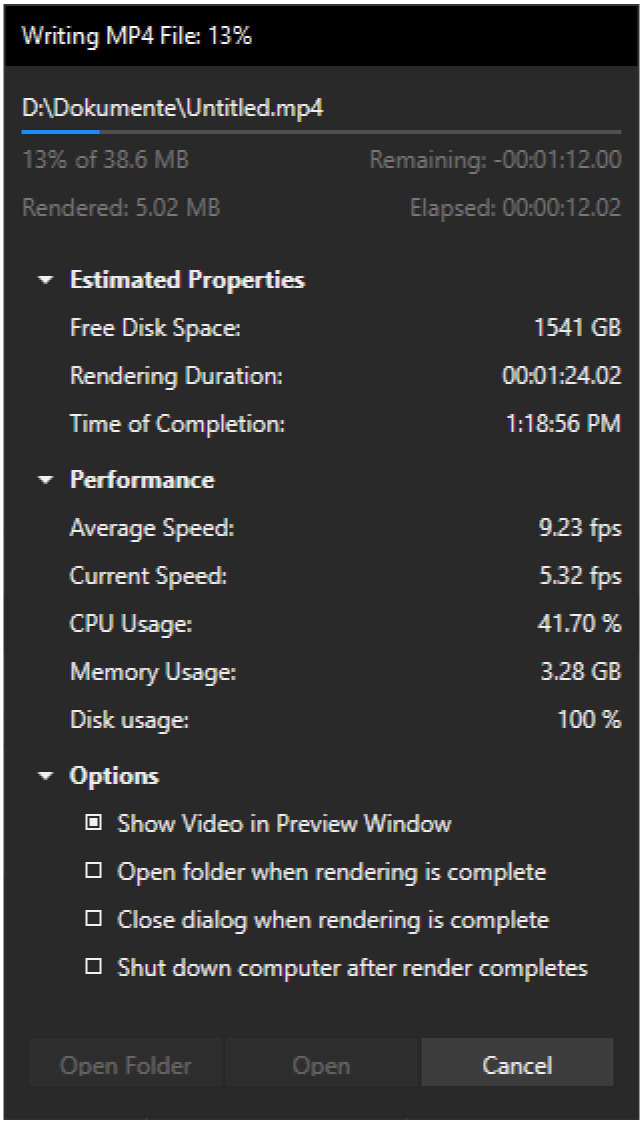
   For more information, see Custom rendering templates

6. Use the RENDER OPTIONS drop-down to select or clear the check boxes as needed.

   For more information, see Render options

7. Click RENDER to start exporting.

   After you click RENDER, a progress dialog shows status and details.



Writing MP4 File: 13%

D:\Dokumente\Untitled.mp4

13% of 38.6 MB — Remaining: -00:01:12.00

Rendered: 5.02 MB — Elapsed: 00:00:12.02

Estimated Properties

Free Disk Space:	1541 GB
Rendering Duration:	00:01:24.02
Time of Completion:	1:18:56 PM

Performance

Average Speed:	9.23 fps
Current Speed:	5.32 fps
CPU Usage:	41.70 %
Memory Usage:	3.28 GB
Disk usage:	100 %

Options

- ☑ Show Video in Preview Window
- ☐ Open folder when rendering is complete
- ☐ Close dialog when rendering is complete
- ☐ Shut down computer after render completes

8. When rendering is complete, click OPEN to play the file with its associated player, or click OPEN FOLDER to open the target folder.

> **NOTE**
> If your project uses 24p DV and you need a standard DV file, choose a template that inserts pulldown (for example, NTSC DV 24P (INSERTING 2-3-3-2 PULLDOWN)). If you enabled the preference ALLOW PULLDOWN REMOVAL WHEN OPENING 24P DV, ensure your template settings match your intended workflow. For background on pull-down, see Glossary.

NOTE

- For lossless pass-through, see Smart Rendering.
- For format-specific guidance, see Render Apple ProRes Files.

Example: Export a video for YouTube

---

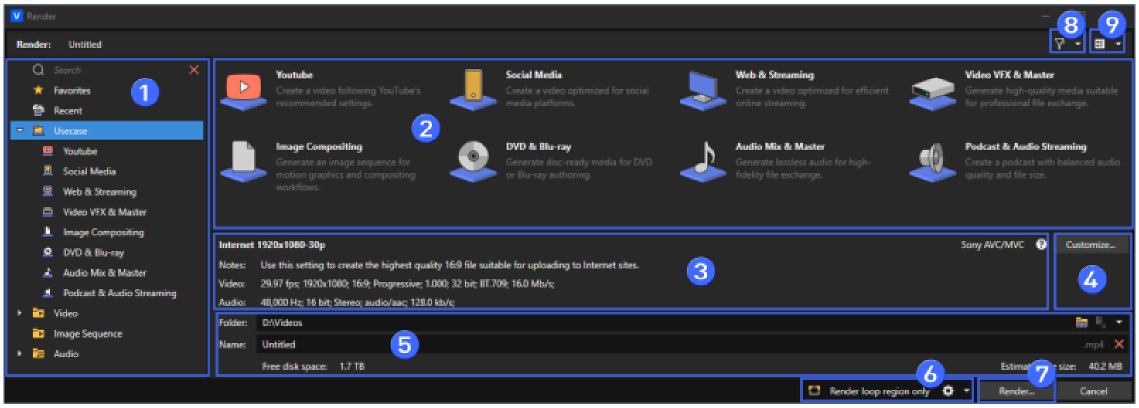
1. Click FILE menu > RENDER.
2. In the USECASE tree, select YOUTUBE.
3. Choose the template INTERNET HD 1080P 29.97 FPS (AVC/H.264)

   NOTE or select the matching frame-rate variant such as 25 FPS. Hardware-accelerated variants (e.g., INTEL QSV, AMD VCE) are also valid.
4. Click CUSTOMIZE TEMPLATE and confirm:
   - **Resolution:** 1920 × 1080
   - **Frame rate:** match your source (29.97 or 25 fps)
   - **Bitrate:** 12–16 Mbps (VBR or CBR)
   - **Audio:** AAC, 192 kbps, 48 kHz
5. Click OK, set file name and destination, then click RENDER.

TIP

If the template list is long, type INTERNET HD 1080P in the search field or enable SHOW ALL FORMATS.

Dialog overview



Render
Render: Untitled
Search
Favorites
Recent
Usecase
Youtube
Social Media
Web & Streaming
Video VFX & Master
Image Compositing
DVD & Blu-ray
Audio Mix & Master
Podcast & Audio Streaming
Video
Image Sequence
Audio
Customize...
Render...
Cancel
1
2
3
4
5
6
7
8
9

Youtube Create a video following YouTube's recommended settings.

Social Media Create a video optimized for social media platforms.

Web & Streaming Create a video optimized for efficient online streaming.

Video VFX & Master Generate high-quality media suitable for professional file exchange.

Image Compositing Generate an image sequence for motion graphics and compositing workflows.

DVD & Blu-ray Generate disc-ready media for DVD or Blu-ray authoring.

Audio Mix & Master Generate lossless audio for high-fidelity file exchange.

Podcast & Audio Streaming Create a podcast with balanced audio quality and file size.

Internet 1920x1080-30p Sony AVC/MVC

Notes: Use this setting to create the highest quality 16:9 file suitable for uploading to Internet sites.

Video: 29.97 fps; 1920x1080; 16:9; Progressive; 1.000; 32 bit; BT.709; 16.0 Mb/s;

Audio: 48,000 Hz; 16 bit; Stereo; audio/aac; 128.0 kb/s;

Folder: D:\Videos

Name: Untitled .mp4

Free disk space: 1.7 TB

Estimated file size: 40.2 MB

Render loop region only

FIGURE *New Render dialog with tree navigation and use case categories*

#	UI element	Description
1	Tree navigation	Browse categories on the left, including SEARCH, FAVORITES, and USECASE.
2	Templates	Shows available templates for the item selected in the tree.
3	Template details	Shows a brief summary for the selected template.
4	CUSTOMIZE...	Open **Custom Settings** to fine-tune encoder parameters or save a custom preset. see Custom rendering templates
5	Output File	Set FOLDER and NAME; use PROJECT LOCATION to jump to the project folder.
6	Render options & estimate	Open the gear menu and toggle options such as RENDER LOOP REGION ONLY; the **Estimated size** updates as you change templates and settings (see Rendering your project).
7	RENDER...	Start rendering with the selected template and options.
8	Filter	Match project video/audio settings or toggle SHOW ALL FORMATS.
9	View	Switch between LIST, DETAILS, or THUMBNAILS and adjust SORT BY.

Filters and matching

Setting	Description
Match project video settings	
RESOLUTION	Show templates that match the project resolution.
FRAMERATE	Show templates that match the project frame rate.
RATIO	Filter by the project's display aspect ratio.
PIXEL RATIO	Match the project pixel aspect ratio.
FIELD ORDER	Match progressive or interlaced order.
COLOR DEPTH	Filter by the project bit depth.
HDR	Show HDR-capable templates only.
COLOR SPACE	Filter by the project color space.
Match project audio settings	
SAMPLE RATE	Show templates with the same sample rate.
CHANNEL COUNT	Filter by stereo, 5.1, etc.
BIT DEPTH	Match the project's audio bit depth.
Global	
SHOW ALL FORMATS	Display every available output, including formats that do not match current project settings.

> **NOTE** Filters affect the **template list only**. They do not change project properties.

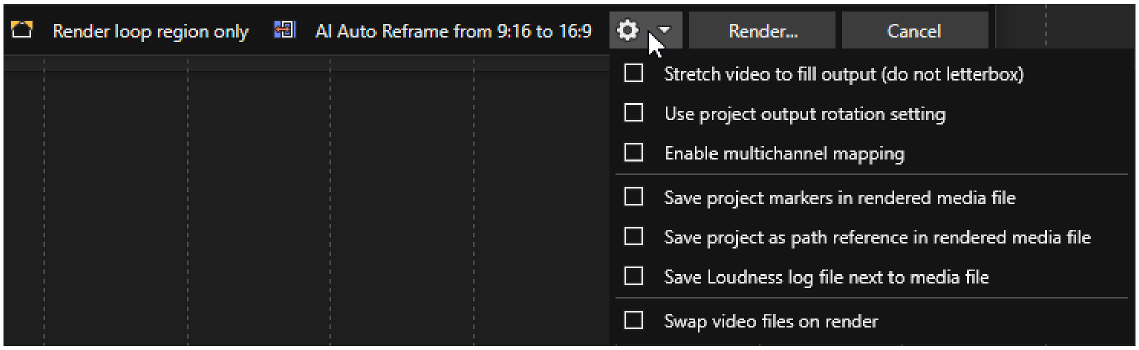
View and sort

Option	Description
LIST	Compact view for scanning many templates quickly.
DETAILS	Shows extra columns for easier comparison.
THUMBNAILS	Visual preview if available for a format family.
SORT BY	Change the ordering (for example, by name). Use together with search and filters to narrow the list.

Template details

- **Details panel** — the panel under the template list shows **Notes** and the key **Video**/**Audio** parameters of the selected template (resolution, frame rate, pixel aspect ratio; sample rate, channels, codec).
- CUSTOMIZE... — open the **Custom Settings** dialog to fine-tune the selected template. For creating, saving, and managing your own presets, see Custom rendering templates.
- **Estimated file size** — the size updates dynamically based on the selected template, bitrate mode (CBR/VBR, two-pass), audio settings, and loop region.

Render options



Render loop region only
AI Auto Reframe from 9:16 to 16:9
Render...
Cancel

☐ Stretch video to fill output (do not letterbox)
☐ Use project output rotation setting
☐ Enable multichannel mapping
☐ Save project markers in rendered media file
☐ Save project as path reference in rendered media file
☐ Save Loudness log file next to media file
☐ Swap video files on render

Option	Description
RENDER LOOP REGION ONLY	Render only the timeline loop range. This button appears when a loop selection is active. For more information, see Loop Playback
AI AUTO REFRAME	This button automatically appears when the delivery size of your final render does not match the original aspect ratio For more information, see AI Auto Reframe
Drop-down:	
STRETCH VIDEO TO FILL OUTPUT FRAME SIZE (DO NOT LETTERBOX)	Avoid black bars from appearing on the top and bottom or the sides of the output when aspect ratios differ.
USE PROJECT OUTPUT ROTATION SETTING	Apply the project's OUTPUT ROTATION setting to the render. When cleared, media uses its own rotation from Media Properties while the project remains unrotated (useful for proofing on unrotated displays)." For more information, see Creating rotated projects
ENABLE MULTICHANNEL MAPPING	Render a single file containing multiple channels (e.g., 5.1) For more information, see Rendering Multichannel Audio Files
SAVE PROJECT MARKERS IN MEDIA FILE	Include markers, regions, and command markers in supported formats. For more information, see Inserting markers, Inserting regions and Inserting command markers

Option	Description
SAVE PROJECT AS PATH REFERENCE IN RENDERED FILE	Store a reference to the source project path in the rendered file. Saving the project path allows you to easily return to the source project if you use your rendered file in another project. **NOTE** ● The project information in the rendered file is a reference to a project file only. If you modify the project file after rendering, the project data will no longer match the rendered file. To edit a project using a path reference, the project file and all media must be available on your computer. ● The checkbox will be unavailable if you haven't saved your project or if you're rendering using a third-party file-format plug-in. ● For more information, see Project references in rendered files

Option	Description
SAVE LOUDNESS LOG FILE NEXT TO MEDIA FILE	Analyze the loudness of your file and create a loudness log (`_loud.txt`) that summarizes audio levels. The loudness log is created using the same folder and base name as your sound file with _loud.txt appended to the name. The log will record the file name, format, loudness metering mode, and loudness values throughout the file. **IMPORTANT** Loudness logging is performed after the plug-in chain, but before any codec is applied to your rendered file. Because audio compression may affect audio levels, choose TOOLS | GENERATE LOUDNESS LOG to analyze a rendered file after saving to a compressed format. When the MASTER BUS MODE drop-down list on the Audio tab of the Project Properties dialog is set to 5.1 SURROUND, surround processing is applied when measuring loudness (a gain of ~1.5 dB is applied to the left and right surround channels). When the MASTER BUS MODE drop-down list is set to STEREO, all channels contribute equally to the loudness measurement. Loudness meters
SWAP VIDEO FILES ON RENDER	Safely replace an existing output file after a successful render. The old file is swapped automically to minimize the chance of partial outputs.

Custom settings (overview)

Use CUSTOMIZE... to fine-tune the selected encoder template. The available controls vary by format. The most common tabs include:

Video

- FRAME SIZE, FRAME RATE, FIELD ORDER, PIXEL ASPECT RATIO
- PROFILE/LEVEL (codec-specific)
- Rate control: **CBR** or **VBR** (optionally TWO-PASS)
- Streaming: ENABLE PROGRESSIVE DOWNLOAD (for web playback)

Audio

- SAMPLE RATE, BIT DEPTH, CHANNEL MODE
- Codec-specific settings (for example, AAC bitrate, AC-3 dialog normalization)

System / Project

- Performance/encoder options (format-specific)
- Project overrides such as FULL-RESOLUTION RENDERING QUALITY or COLOR SPACE (when available)

> **TIP** For creating, editing, copying, and deleting custom templates, see Custom rendering templates.

Render progress

Item	Description
Estimated file size & progress	Shows the expected output size and the current completion percentage.
Elapsed / remaining time	Displays elapsed time and the estimated time left to complete the render.
Estimated Properties	Remaining free disk space, estimated total duration, and expected finish time.
Performance	Current/average render speed (fps), memory usage, and CPU usage.
Options	Open the file's folder and/or close the dialog when rendering completes.
SHOW VIDEO IN PREVIEW WINDOW	Display the render in the preview while processing (may reduce render speed).
SHUT DOWN COMPUTER AFTER RENDER COMPLETES	Automatically power down the machine when the render finishes.

> **TIP**
> Render progress also appears in the Windows taskbar. If the render exceeds one minute, a sound plays when finished. Configure this sound in Windows Settings > Personalization > Themes > SOUNDS (event: RENDER COMPLETE).

Smart Rendering

Smart rendering passes through unedited frames without recompression when the source, project, and template properties match. This preserves quality and can significantly reduce render time.

Requirements

- The source media, project settings, and the selected template must match in width, height, frame rate, field order, profile/level (when applicable), and bit rate.
- Frames with effects, compositing, transitions, or resampling are re-encoded.
- To disable the feature, clear ENABLE NO-RECOMPRESS RENDERING on the FILE I/O tab of the PREFERENCES dialog.

How to smart-render

1. Open the **Render** dialog (Rendering your project).
2. Enable MATCH PROJECT SETTINGS in the filters to narrow templates to compatible choices.
3. Select a format that supports smart rendering (see below) and choose a template whose properties match your project.
4. Click RENDER.

Supported formats

- DV AVI
- DV MXF
- IMX MXF (IMX 24p MXF not supported for no-recompress)
- XAVC Intra MXF
- HD MXF
- MPEG-2 (for example, HDV/DVD camcorder files)
- Panasonic P2
- XDCAM EX (selected SP/HQ profiles)

NOTE

Troubleshooting

- **Result is fully re-encoded:** Check for any mismatch (frame rate, field order, bit rate). Ensure effects/transitions are not active on the range.
- **Feature seems disabled:** Verify the ENABLE NO-RECOMPRESS RENDERING preference is turned on.
- **Unexpected re-encode on short sections:** Titles, color correction, stabilization, resampling, or resizing force re-encoding on affected frames.

FURTHER INFORMATION

- Rendering your project

Render Apple ProRes Files

Apple ProRes is a high-quality intermediate codec for finishing, interchange, and archiving. You can render to multiple ProRes profiles depending on the desired quality and file size.

How to render to ProRes

1. Open the **Render** dialog (Rendering your project).
2. In the format tree, select **Apple ProRes**.
3. Choose a template in TEMPLATES, or click CUSTOMIZE... to adjust parameters.
4. Set the destination and file name, then click RENDER.

Profiles

Profile	Typical use / notes
ProRes 422 (Proxy)	Low-bandwidth proxy workflows; ~45 Mbps @ 1080p/29.97.
ProRes 422 (LT)	Lower data rate; ~102 Mbps @ 1080p/29.97.
ProRes 422	General-purpose mastering; ~147 Mbps @ 1080p/29.97.
ProRes 422 (HQ)	Higher quality; ~220 Mbps @ 1080p/29.97.
ProRes 4444	12-bit, RGB 4:4:4; supports alpha; ~330 Mbps @ 1080p/30.
ProRes 4444 XQ	Highest quality; supports alpha; ~500 Mbps @ 1080p/30.

Custom settings (overview)

Video

- FRAME SIZE, FRAME RATE, FIELD ORDER, PIXEL ASPECT RATIO
- PROFILE/BIT DEPTH as supported

Audio

- SAMPLE RATE, BIT DEPTH, CHANNEL MODE

> **NOTE**
> Bit rates above are approximate and vary with frame size, frame rate, and content. Some formats may require additional codecs or plug-ins.

FURTHER INFORMATION

- Rendering your project
- Custom rendering templates

Custom rendering templates

If the selected file type supports it, the Render As dialog allows you to create custom templates for saving files.

> **NOTE**
> - VEGAS Pro templates for rendering multichannel audio in .wav/.wav64, .avi, and .mxf formats may be visible in other Vegas applications that do not support multichannel audio. Using these templates in other applications will not produce the desired result and should be avoided.
> - If you modify a template in the Custom Template dialog without saving it with a new name, the settings will be saved to disk as "Untitled."

Creating or editing a template

1. From the File menu, choose RENDER AS.
2. Select a template in the Output Format box and click the CUSTOMIZE TEMPLATE button to open the Custom Template dialog.
3. Choose a template from the TEMPLATE drop-down list, or enter a new name in the edit box.
4. Built-in presets cannot be edited.
5. When determining bit rates, 1K=1024.
6. Use the Custom Template dialog to set the template's properties.

> **NOTE** For information about specific controls in each file type's Custom Template dialog, click the help ? button.

7. Click the SAVE TEMPLATE button 💾.
8. Click OK to return to the Save As or Render As dialog.

Deleting a template

1. From the File menu, choose RENDER AS.
2. Select a template in the Output Format box and click the CUSTOMIZE TEMPLATE button to open the Custom Template dialog.
3. Choose a template from the TEMPLATE drop-down list.
4. Click the DELETE TEMPLATE button ✖.

   > **NOTE** Built-in presets cannot be deleted.

5. Click OK to return to the Save As or Render As dialog.

Copying rendering templates between computers or user accounts

You can make your customized rendering templates available on another computer or user account by copying .sft2 files to the appropriate location in the new account or computer.

Rendering templates are stored in C:\USERS\<USERNAME>\APPDATA\ROAMING\VEGAS\RENDER TEMPLATES\<PLUG-IN NAME>.

> **NOTE** The AppData folder is not visible unless the SHOW HIDDEN FILES AND FOLDERS radio button is selected on the View tab of the Windows Folder Options control panel.

> **TIP** You can find a plug-in's name by clicking the ABOUT button in the Render As dialog.

To make a template available on another computer or user account, copy the .sft2 file to the same location in another account.

For example, to make JSmith's custom wave template available for the AJones user account, copy the appropriate .sft2 file from this folder:

C:\Users\JSmith\AppData\Roaming\Vegas\Render Templates\wave\

to this folder:

C:\Users\AJones\AppData\Roaming\Vegas\Render Templates\wave\

> **TIP** If you're copying templates from an older Vegas application, templates are saved as .sft files in the following folder: C:\DOCUMENTS AND SETTINGS\<USERNAME>\APPLICATION DATA\VEGAS\FILE TEMPLATES\<PLUG-IN NAME>\<PLUG-IN GUID>.

Project tab

Some file formats include a Project tab in the Custom Template dialog.

Item	Description
Video rendering quality	Choose a rendering quality if you want to override the FULL-RESOLUTION RENDERING QUALITY setting in the Project Properties dialog.
COLOR SPACE	Choose a color space to use for the rendering template. For more information, see Specifying the color space in a custom rendering template

Rendering Multichannel Audio Files

If you want to render a single audio file with multiple audio channels, you can render to one of the following formats:

- WAV/WAV64 (for information about rendering 5.1 channel WAV/WAV64 files, please see Rendering your 5.1 surround project)
- AVI

- Material Exchange Format (MXF)

  > **NOTE** MXF files require a video stream.

Render Format	Number of channels
DV MXF	Always contains 4 audio channels. You can use the CHANNELS drop-down list on the Audio tab of the Custom Template dialog to choose how many channels will be filled with audio. For example, if you choose 2 from the CHANNELS drop-down list, the rendered file will contain 4 audio channels: two channels will contain audio, and two channels will contain silence. For more information, see Custom rendering templates
IMX MXF	Always contains 8 audio channels. You can use the CHANNELS drop-down list on the Audio tab of the Custom Template dialog to choose how many channels will be filled with audio. For example, if you choose 2 from the CHANNELS drop-down list, the rendered file will contain 8 audio channels: two channels will contain audio, and six channels will contain silence.
HD MXF	Can contain 2 or 4 audio channels. You can use the CHANNELS drop-down list on the Audio tab of the Custom Template dialog to choose how many channels will be rendered. For example, if you choose 2 from the CHANNELS drop-down list, the rendered file will contain only 2 audio channels.

> **NOTE** WMV/WMA, AC-3, and ATRAC support multichannel surround formats; channel mapping is not supported.

1. Create your project.
2. In the Mixing Console window, add a bus for each channel (or channel pair) you want to include in your rendered file.

   For example, if you wanted to create a six-channel .wav file, you could set up your project with three or six busses. If you use three busses, the left and right channels of each bus will be saved to a separate channel. If you use six busses, you can save the mono downmix from each bus as a separate channel.

   For more information, see Adding audio busses

   > **NOTE** If you're working with a 5.1 surround project, you can map the six channels from the Surround Master bus to six output channels.

3. Assign tracks to busses to map the audio in your project to the desired channel.

   For more information, see Assigning tracks to busses

4. From the File menu, choose RENDER AS to display the Render As dialog.
5. Use the Output File controls in the Render As dialog to choose the location where you want to use to save your file.
6. Select the ENABLE MULTICHANNEL RENDERING check box.
7. Click the CHANNELS button if you want to map the busses in your project to channels in the rendered file. If you don't specify a channel mapping, VEGAS Pro will not render a multichannel file.
   1. In the Channel Mapping dialog, select the checkbox for each bus you want to include in the rendered file. Each stereo bus will be saved to two channels in the rendered file. If you want to save a bus to a single channel, select the (MONO DOWNMIX) checkbox for that bus.
   2. If you want to change order of the busses in the channel mapping, select the bus and click the MOVE UP or MOVE DOWN button.
   3. Click OK to close the Channel Mapping dialog and return to the Render As dialog.

> **TIP** Channel mapping is also available when printing to tape from the timeline, rendering to a new track, and exporting video to an XDCAM disc.

8. Use the Output Format controls to choose the type of file you want to create.

   The Output Format box displays the file types and formats you can use to render your file. You can double-click headings (or click the arrow buttons) to expand or collapse lists of available templates. Click a template to select it and use that format for rendering, or select a template and click the CUSTOMIZE TEMPLATE button to modify the template's settings.

   If you choose DEFAULT TEMPLATE when rendering to .wav, .w64, or .avi, the number of channels will match the number of channels specified in the Channel Mapping dialog.

   > **NOTE** If you choose a rendering template that specifies more channels than you have set up in the Channel Mapping dialog, the additional channels will be rendered as silence.

   If you choose a template that specifies fewer channels than you have set up in the Channel Mapping dialog, the setting from the template will be used. Additional mapped channels will be ignored.

9. Select or clear the check boxes in the Render Options section as needed:

   a. Select the RENDER LOOP REGION ONLY checkbox if you want to save only the portion of the project that is contained within the loop region. LOOP PLAYBACK does not need to be selected for this option to work.

   b. Select the STRETCH VIDEO TO FILL OUTPUT FRAME SIZE (DO NOT LETTERBOX) checkbox when you are rendering to an output format with a slightly different aspect ratio than your project settings. This will prevent black bars from appearing on the top and bottom or the sides of the output.

   c. Select the USE PROJECT OUTPUT ROTATION SETTING checkbox if you're rendering a rotated project and want to use the OUTPUT ROTATION setting from the Project Properties dialog for your rendered file.

When the checkbox is cleared, the media is rotated according to its Media Properties setting, but the project itself is unrotated—you can use this setting to proof your project on an unrotated display.

For more information, see Creating rotated projects

10. Use the Metadata Options controls to whether information about your project is saved with the rendered media file:
    a. If the selected file type supports it, you can select the SAVE PROJECT MARKERS IN MEDIA FILE checkbox to include markers, regions, and command markers in the rendered media file.

       For more information, see Inserting markers Inserting regions and Inserting command markers

    b. Select the SAVE PROJECT AS PATH REFERENCE IN RENDERED FILE checkbox if you want to save the path to your VEGAS Pro project in the rendered file. Saving the project path allows you to easily return to the source project if you use your rendered file in another project.

       > **NOTE**
       > - The project information in the rendered file is a reference to a project file only. If you modify the project file after rendering, the project data will no longer match the rendered file. To edit a project using a path reference, the project file and all media must be available on your computer. For more information, see Project references in rendered files
       > - The checkbox will be unavailable if you haven't saved your project or if you're rendering using a third-party file-format plug-in.

11. Click the RENDER button. A dialog is displayed to show rendering progress.
12. When rendering is complete, click the OPEN button to play the file with its associated player, or click OPEN FOLDER to open the folder where you saved the file.

Rendering MPEG Files

Use the MainConcept plug-in to render MPEG files. The plug-in includes templates that will work well for most of your encoding needs, and you can create custom templates if you have special encoding requirements.

NOTE

- VEGAS Pro does not create Video CDs, but you can use the MPEG plug-in to render files for your VCD-creation application. Consult the application's documentation to determine the file requirements before rendering.
- If you choose to save markers in your rendered MPEG-2 file, DVD Architect will read those markers as chapter markers. Ensure the RENDER I-FRAMES AT MARKERS checkbox is selected before rendering (in the Render As dialog, choose MAINCONCEPT MPEG-2 from the TEMPLATE drop-down list, and then click the CUSTOM button. In the Custom Template dialog, select the Video tab and select the RENDER I-FRAMES AT MARKERS check box).

IMPORTANT MPEG video requires frame widths that are divisible by 16 and frame heights that are divisible by 2. Noncompliant frame dimensions can cause unpredictable results or system instability.

Using default MPEG templates

When you browse rendering templates in the Render As dialog, a description of the selected template's settings is displayed below the list of templates. ℹ For more information, see Rendering your project

Creating custom MPEG templates

In the Render As dialog, choose MAINCONCEPT MPEG-1 or MAINCONCEPT MPEG-2 in the Output Format box and click the CUSTOMIZE TEMPLATE button if you want to create your own MPEG encoding templates.

For information about the active page in the Custom Template dialog, click the ? button.

IMPORTANT Custom templates have many available options, and consequently, a lot of room for error. Verify your file requirements before creating a template. If you're using third-party DVD-burning software, for example, refer to the application's documentation to determine the application's file requirements.

Viewing MPEG-2 files on a computer

MPEG-2 files require an MPEG-2 decoder in order to view them in Windows Media Player and other applications. Vegas does not endorse or support any 3rd-party MPEG-2 decoders.

Rendering Projects for Use in DVD Architect

If you have DVD Architect software, you can avoid unnecessary transcoding or recompression by using VEGAS Pro to render your media files in the appropriate formats prior adding them to your DVD Architect project.

NOTE Vegas AC-3 and MainConcept MPEG-2 encoders provide templates that will produce files that do not require recompression (unless the file size is too large to fit on a DVD).

AC-3 audio (.ac3)

Sample Rate	Bit Rate	Channels
48,000 Hz	192 Kbps (64 Kbps to 640 Kbps is supported)	Stereo
48,000 Hz	448 Kbps (64 Kbps to 640 Kbps is supported)	5.1 surround

PCM audio (.wav or .w64)

Sample Rate	Bit Depth	Channels	Compression
48,000 Hz	16, 20, or 24 bit	Stereo	Uncompressed
96,000 Hz	16, 20, or 24 bit	Stereo	Uncompressed

NTSC MPEG video (.m2p, .mp2, .mpg, .mpeg, .mpv)

If you’re using the MainConcept MPEG-2 encoder in VEGAS Pro software, use the DVD ARCHITECT NTSC VIDEO STREAM or DVD ARCHITECT 24P NTSC VIDEO STREAM template to render your video stream. You'll need to render your audio stream separately according to the parameters listed in the AC-3 audio or PCM audio headings in this section.

If you're rendering with a different application, the following settings will produce a compliant NTSC MPEG-2 video stream.

Frame Size	Frame Rate (fps)	Aspect Ratio	Maximum Group of Pictures	Max. Bit Rate
720x480	29.97 or 23.976 + 2-3 pulldown	4:3	36	9.8 Mbps
704x480	29.97 or 23.976 + 2-3 pulldown	4:3	36	9.8 Mbps
352x240	29.97 or 23.976 + 2-3 pulldown	4:3	36	9.8 Mbps
352x480	29.97 or 23.976 + 2-3 pulldown	4:3	36	9.8 Mbps
720x480	29.97 or 23.976 + 2-3 pulldown	16:9	36	9.8 Mbps
720x480	29.97 or 23.976 + 2-3 pulldown	16:9	36	9.8 Mbps

> **NOTE** The MainConcept MPEG-2 encoder in VEGAS Pro renders with the Low Delay flag turned off. If you're rendering with a different encoder, ensure Low Delay is turned off.

PAL MPEG video (.m2p, .mp2, .mpg, .mpeg, .mpv)

If you're using the MainConcept MPEG-2 encoder in VEGAS Pro software, use the DVD ARCHITECT PAL VIDEO STREAM or DVD ARCHITECT PAL WIDESCREEN VIDEO STREAM template to render your video stream. You'll need to render your audio stream separately according to the parameters listed in the AC-3 audio or PCM audio headings in this section.

If you're rendering with a different application, the following settings will produce a compliant PAL MPEG-2 video stream.

Frame Size	Frame Rate	Aspect Ratio	Maximum Group of Pictures	Max. Bit Rate
704x576	25 fps	4:3	30	9.8 Mbps
352x576	25 fps	4:3	30	9.8 Mbps
352x288	25 fps	4:3	30	9.8 Mbps
704x480	25 fps	16:9	30	9.8 Mbps

> **NOTE** The MainConcept MPEG-2 encoder in VEGAS Pro renders with the Low Delay flag turned off. If you're rendering with a different encoder, ensure Low Delay is turned off.

Burning discs

You can create several types of discs in VEGAS® Pro to archive and distribute your project:

- **Track-at-once (TAO) CDs** can be burned in multiple sessions over a period of time. Before you can use a TAO disc in an audio CD player, however, you must close the session. TAO CDs are convenient for sharing your projects and testing your mix, but are generally not acceptable as masters for duplication.

- **Disc-at-once (DAO or Red Book) CDs** are burned in a single session. Use DAO burning when creating a master disc for replication.
- **DVDs** can be played in a DVD player or on a computer with a DVD drive.

Track-at-once (TAO) CD burning

From the Tools menu, choose BURN DISC, and choose TRACK-AT-ONCE AUDIO CD from the submenu to save your project as a track on an audio CD. Before you can use a TAO disc in an audio CD player, however, you must close the session.

> **NOTE**
> - Track-at-once CDs contain two-second pauses between tracks. If you want to burn a CD with no pause time, burn a disc-at-once CD. For more information, see Disc-at-once (DAO or Red Book) CD Burning
> - The entire project is written to a CD track. If your project has events on muted tracks that extend beyond the end of the audible material, the muted events burn as silence at the end of your CD track. To burn only a portion of a project, create a loop region and select the BURN LOOP REGION ONLY check box.

1. From the Tools menu, choose BURN DISC, and choose TRACK-AT-ONCE AUDIO CD from the submenu. The Burn Track-at-Once Audio CD dialog displays the length of the current file and the amount of time remaining on the disc in your CD recorder.

2. Choose a setting from the ACTION drop-down list:

Item	Description
Burn audio	Begins recording audio to your CD when you click the START button. You will need to close the disc before it can be played in an audio CD player.
Test, then burn audio	Performs a test to determine whether your files can be written to the CD recorder without encountering buffer underruns. Recording begins after the test if it is successful.
Test only	Performs a test to determine whether your files can be written to the CD without encountering buffer underruns. No audio is recorded to the CD.
Close disc	Closes your disc without adding any audio when you click the START button. Closing a disc allows your files to be played on an audio CD player.
Erase RW disc	If you're using a rewritable CD, the disc will be erased when you click the START button.

3. Select your burning options:

Item	Description
BUFFER UNDERRUN PROTECTION	Select this checkbox if your CD recorder supports buffer underrun protection. Buffer underrun protection allows a CD recorder to stop and resume burning.
Erase RW disc before burning	If you're using a rewritable CD, select this checkbox to erase the CD before you begin burning.
Close disc when done burning	Select this checkbox to close the CD after burning. Closing a disc allows your files to be played on an audio CD player.
Eject disc when done	Select this checkbox to eject the CD automatically when burning has completed.
Burn selection only	Select this checkbox to burn only the audio within the loop region.

4. From the DRIVE drop-down list, choose the CD drive that you want to use to burn your CD.
5. From the SPEED drop-down list, choose the speed at which you want to burn. MAX will use your drive's fastest possible speed; decrease the setting if you have difficulty burning.
6. Click the START button.

> **IMPORTANT** Clicking the CANCEL button after the disc-writing process has begun will render your disc unusable (though it will still make a fine coaster for your favorite beverage).

Disc-at-once (DAO or Red Book) CD Burning

From the Tools menu, choose BURN DISC, and choose DISC-AT-ONCE AUDIO CD from the submenu to burn a disc-at-once CD using the current CD layout.

Use DAO CDs when you need to create a master disc for mass replication.

> **TIP**
> Right-click the ruler and choose AUDIO CD TIME from the shortcut menu to help you arrange your project. The ruler will display hh:mm:ss:ff (hours:minutes:seconds:frames), and the Time Display window will display tt+mm:ss:ff (track number +/- minutes:seconds:frames). Audio CD time uses a frame rate of 75 fps.
>
> If your first track region begins before 00:00:02:00, a timeline offset is automatically added so the first track begins at exactly two seconds.
>
> From the Options menu, choose QUANTIZE TO FRAMES to turn off frame quantization before creating a CD layout. For more information, see Quantize to frames

Creating a new CD layout

1. From the File menu, choose NEW to create a new project.
2. From the File menu, choose IMPORT to add the files that you want to use to the Project Media list.
3. Use the Project Media window to sort your media:
    1. Click the VIEWS button and choose DETAILED from the menu.
    2. Enter track numbers in the COMMENT field to assign a track order.
    3. Click the COMMENT column header to sort the comments in ascending order.
    4. In the Project Media window, select your tracks, right-click the selection, and choose ADD AS CD TRACK from the shortcut menu.

       When you add CD tracks from the Project Media window, tracks are inserted starting at the cursor position, and the necessary silence is added between tracks. Each track is marked on the CD layout bar and is assigned a name based on the media file name.

       If necessary, you can edit the CD track list information by dragging the track and index markers or by using the AUDIO CD TRACK LIST setting in the Edit Details window.

> **NOTE** CD track numbering is based on the FIRST TRACK NUMBER ON DISC setting on the Audio CD tab in the Project Properties dialog. For more information, see Setting project properties

Adding CD layout regions and markers to an existing VEGAS Pro project

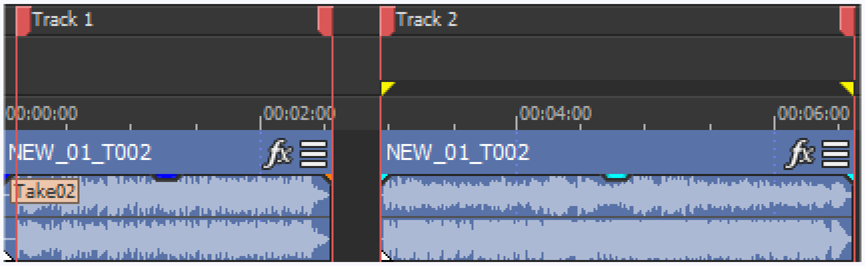
1. Arrange your audio files on the timeline.
2. Position the cursor and choose TIME from the Insert menu to insert two seconds before each track.

   > **NOTE** If you want to create a live CD with no silence between tracks, insert silence only before the first track.

3. On the timeline, select the length of the track and choose AUDIO CD TRACK REGION from the Insert menu (or press N) to add track regions. A Red Book CD can contain up to 99 tracks.

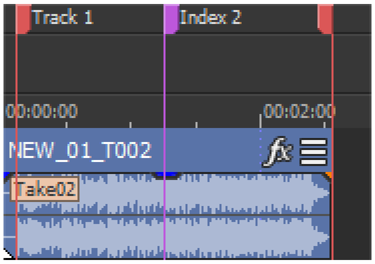
   > **NOTE** CD track numbering is based on the FIRST TRACK NUMBER ON DISC setting on the Audio CD tab in the Project Properties dialog. For more information, see Setting project properties

   > **TIP**
   >
   > Double-click a region tag to select the duration of the track.



4. If you want to add index markers, position the cursor and choose AUDIO CD TRACK INDEX from the Insert menu (or press Shift+N).

   You can use indices to subdivide a track. For example, a track could contain a orchestral composition, and index markers could allow navigation to each of the movements. Each track on a Red Book CD can contain up to 99 index markers.

Creating tracks automatically using events on the timeline

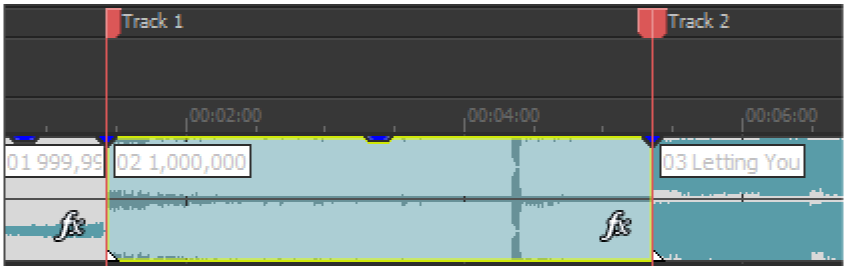
From the Tools menu, choose LAY OUT AUDIO CD FROM EVENTS to automatically create a CD layout for a disc-at-once audio CD. The CD layout bar is displayed and track regions are added.

> **NOTE** If multiple events are touching, they will be treated as a single track.

Inserting hidden or bonus tracks

Adding a hidden track at the beginning of a CD

If your CD recorder supports it, you can add a hidden track by adding a track in the space before Track 1. When the CD is inserted in an audio CD player, it will automatically start at Track 1, but the user can find the hidden track by rewinding past the beginning of the first track.

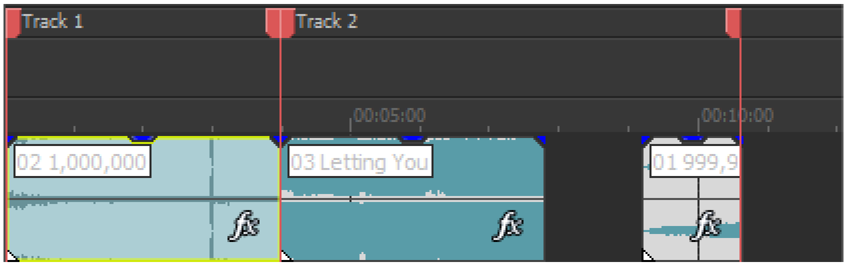


> **NOTE** Most CD recorders require that the space before Track 1 be exactly two seconds, which eliminates the possibility of hiding tracks at the beginning of a CD. Check your CD recorder's documentation for specific information about your drive.

Adding a bonus track at the end of a CD

You can hide a track at the end of a CD by adding silence at the end of the last track and adding the new track after the silence. Drag the final region tag to the new end of the CD.

Because both events are marked by a single CD layout entry, they will be treated as one track by an audio CD player.



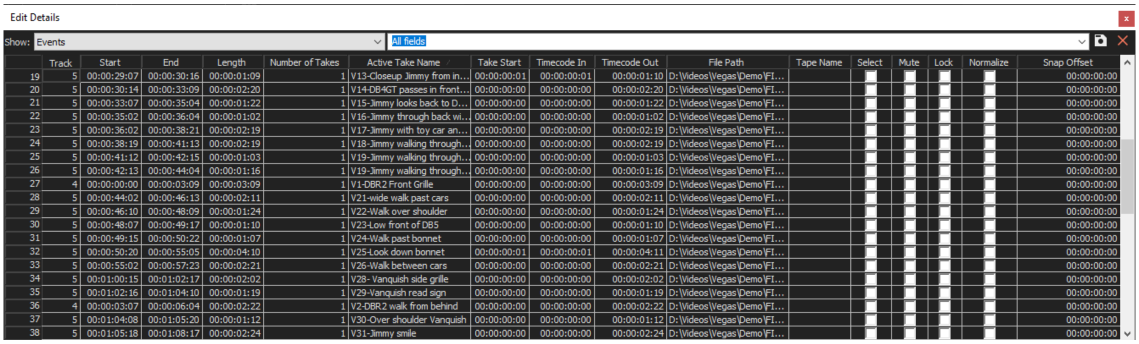
Viewing and editing the audio CD track list

The track list is the chronological reference that the CD-R device uses when writing a CD. This list contains information about tracks and indices. A track list is automatically generated when you add tracks to your CD project using any of the methods described in this topic.

Viewing the audio CD track list

1. Choose VIEW | WINDOW | EDIT DETAILS to display the Edit Details window.
2. From the SHOW drop-down list, choose AUDIO CD TRACK LIST.

   The list displays information for each of the tracks and indices in your CD layout.



Edit Details

Show: Events | All fields

	Track	Start	End	Length	Number of Takes	Active Take Name	Take Start	Timecode In	Timecode Out	File Path	Tape Name	Select	Mute	Lock	Normalize	Snap Offset
19	5	00:00:29:07	00:00:30:16	00:00:01:09	1	V13-Closeup Jimmy from in…	00:00:00:01	00:00:00:01	00:00:01:10	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
20	5	00:00:30:14	00:00:33:09	00:00:02:20	1	V14-DB4GT passes in front…	00:00:00:00	00:00:00:00	00:00:02:20	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
21	5	00:00:33:07	00:00:35:04	00:00:01:22	1	V15-Jimmy looks back to D…	00:00:00:00	00:00:00:00	00:00:01:22	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
22	5	00:00:35:02	00:00:36:04	00:00:01:02	1	V16-Jimmy through back wi…	00:00:00:00	00:00:00:00	00:00:01:02	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
23	5	00:00:36:02	00:00:38:21	00:00:02:19	1	V17-Jimmy with toy car an…	00:00:00:00	00:00:00:00	00:00:02:19	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
24	5	00:00:38:19	00:00:41:13	00:00:02:19	1	V18-Jimmy walking through…	00:00:00:00	00:00:00:00	00:00:02:19	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
25	5	00:00:41:12	00:00:42:15	00:00:01:03	1	V19-Jimmy walking through…	00:00:00:00	00:00:00:00	00:00:01:03	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
26	5	00:00:42:13	00:00:44:04	00:00:01:16	1	V19-Jimmy walking through…	00:00:00:00	00:00:00:00	00:00:01:16	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
27	4	00:00:00:00	00:00:03:09	00:00:03:09	1	V1-DBR2 Front Grille	00:00:00:00	00:00:00:00	00:00:03:09	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
28	5	00:00:44:02	00:00:46:13	00:00:02:11	1	V21-wide walk past cars	00:00:00:00	00:00:00:00	00:00:02:11	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
29	5	00:00:46:10	00:00:48:09	00:00:01:24	1	V22-Walk over shoulder	00:00:00:00	00:00:00:00	00:00:01:24	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
30	5	00:00:48:07	00:00:49:17	00:00:01:10	1	V23-Low front of DB5	00:00:00:00	00:00:00:00	00:00:01:10	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
31	5	00:00:49:15	00:00:50:22	00:00:01:07	1	V24-Walk past bonnet	00:00:00:00	00:00:00:00	00:00:01:07	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
32	5	00:00:50:20	00:00:55:05	00:00:04:10	1	V25-Look down bonnet	00:00:00:01	00:00:00:01	00:00:04:11	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
33	5	00:00:55:02	00:00:57:23	00:00:02:21	1	V26-Walk between cars	00:00:00:00	00:00:00:00	00:00:02:21	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
34	5	00:01:00:15	00:01:02:17	00:00:02:02	1	V28- Vanquish side grille	00:00:00:00	00:00:00:00	00:00:02:02	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
35	5	00:01:02:16	00:01:04:10	00:00:01:19	1	V29-Vanquish read sign	00:00:00:00	00:00:00:00	00:00:01:19	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
36	4	00:00:03:07	00:00:06:04	00:00:02:22	1	V2-DBR2 walk from behind	00:00:00:00	00:00:00:00	00:00:02:22	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
37	5	00:01:04:08	00:01:05:20	00:00:01:12	1	V30-Over shoulder Vanquish	00:00:00:00	00:00:00:00	00:00:01:12	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00
38	5	00:01:05:18	00:01:08:17	00:00:02:24	1	V31-Jimmy smile	00:00:00:00	00:00:00:00	00:00:02:24	D:\Videos\Vegas\Demo\FI…		☐	☐	☐	☐	00:00:00:00

Item	Description
Track	Displays the number of the track as it will appear on the CD.
Index	Displays the index value within the track. For example, if a track had two indices, they would appear as 2 and 3 (the start of the track is always Index 1).
Position	Displays the timeline position of the beginning of the track.
End	Displays the timeline position of the end of the track.
Length	Displays the length of the track (including the two-second pause between tracks).
Name	Enter a name that will be used to identify the track in the timeline.
Prot	Select the checkbox to add a flag to the Q subcode to prevent digital copying of your CD. In order to use copy protection, the CD player must support the copy-protection flag.
Emph	Select the checkbox to add a pre-emphasis flag to the Q subcode. Pre-emphasis is a simple noise-reduction process that is implemented by a CD player. Emphasis involves boosting high frequencies during CD writing and cutting those frequencies during playback. The emphasis process reduces high-frequency noise without disrupting the natural frequency of the source material. VEGAS Pro does not impart the pre-emphasis boost on a track; it can only set the flag. In order for pre-emphasis to occur, the CD recorder and player must support the flag. Check your CD drive documentation to determine whether your drive supports pre-emphasis flags.
ISRC	Enter the (International Standard Recording Code) that will be used to identify your disc.

Editing the list

Double-click an entry in the list to edit it. As you edit the fields, the track and indices in the timeline are updated.

Copying the list

Click the box in the top-left corner of the Edit Details window to select all rows in the list, and press Ctrl+C to copy them to the clipboard. You can then paste the list into a document to create a PQ sheet for a CD replicator.

Importing a CD Architect version 4 project

You can also work with your existing CD Architect (.cdp) version 4 projects. For more information about opening a CD Architect project, see Opening a project or media file

Burning your disc

After arranging your media on the timeline and adding CD layout regions and markers, you're ready to burn.

1. From the Tools menu, choose BURN DISC, and choose DISC-AT-ONCE AUDIO CD from the submenu. The Burn Disc-at-Once Audio CD dialog is displayed.
2. From the DRIVE drop-down list, choose the CD drive that you want to use to burn your CD.
3. From the SPEED drop-down list, choose the speed at which you want to burn. MAX will use your drive's fastest possible speed; decrease the setting to prevent the possibility of buffer underruns.
4. Select the BUFFER UNDERRUN PROTECTION checkbox if your CD recorder supports buffer underrun protection. Buffer underrun protection allows a CD recorder to stop and resume burning.

    > **IMPORTANT** Buffer underrun protection can create a disc that can be played in CD players but may contain a bit error where burning stopped and restarted. Consider clearing this checkbox when creating a premaster disc.

5. Choose a radio button in the BURN MODE box:

Item	Description
Burn CDs	Begins recording audio to your CD immediately.
Test first, then burn CDs	Performs a test to determine whether your files can be written to the CD recorder without encountering buffer underruns. No audio is recorded to the CD during the test, and recording begins after the test if it is successful.
Test only (do not burn CDs)	Performs a test to determine whether your files can be written to the CD recorder without encountering buffer underruns. No audio is recorded to the CD.

6. Select the RENDER TEMPORARY IMAGE BEFORE BURNING checkbox if you want to render your CD project to a temporary file before recording. Prerendering can prevent buffer underruns if you have a complex project that cannot be rendered and burned in real time.

> **NOTE** The rendered temporary file will remain until you modify your project or exit the application. If an image file exists when you open the Burn Disc-at-Once Audio CD dialog, the checkbox is displayed as USE EXISTING RENDERED TEMPORARY IMAGE.

7. Select the AUTOMATICALLY ERASE REWRITABLE DISCS checkbox if you're burning to rewritable media and want to erase the disc before burning.
8. Select the EJECT WHEN DONE checkbox if you want to eject the CD automatically when burning has completed.
9. Click OK to start burning.

Burning a DVD from the timeline

From the Tools menu, choose BURN DISC, and then choose DVD from the submenu to render your project and burn it to a DVD.

The rendered project can be played in a DVD player or on any computer with a DVD drive.

1. From the Tools menu, choose BURN DISC, and then choose DVD from the submenu to display the Burn DVD dialog.
2. Choose a setting from the VIDEO FORMAT drop-down list to specify the parameters that should be used for rendering your video stream.

   The AUDIO FORMAT box displays the parameters that should be used for rendering your audio stream.
3. Select recording options for your DVD burner:
   1. Choose a drive from the BURN DRIVE drop-down list to specify the drive you want to use.
   2. From the BURN SPEED drop-down list, choose the speed at which you want to record. MAX will record using the fastest speed possible with your drive; decrease the speed if you have difficulty recording.
   3. Select the EJECT WHEN DONE checkbox if you want to eject the disc automatically when burning has completed.
4. Click OK to start rendering your image file and burning your disc.

Printing video to tape

VEGAS® Pro provides two methods for printing your final movie to tape: you can print to tape directly from the VEGAS Pro timeline, or you can use Vegas Video capture to print an existing rendered file to DV tape.

NOTE
This feature is no longer supported and may be removed from the application in a future version.

To use this feature, click OPTIONS | PREFERENCES to open the dialog.

In the DEPRECATED FEATURES tab, select the checkbox.

Printing video to tape from the timeline

From the Tools menu, choose PRINT VIDEO TO TAPE to print your project to a camera or deck.

IMPORTANT
Important:

- Prerendered files can require significant drive space. On the Video tab of the Project Properties dialog, select a PRERENDERED FILES FOLDER on an a/v-capable drive with ample free space: DV requires approximately 228 MB per minute.
- HDMI print to tape is supported on the Blackmagic Design DeckLink HD Extreme/Intensity Pro/HD Extreme 3D, AJA Io 4K and AJA KONA LHi cards. Please note that AJA XENA cards are now branded as KONA cards: http://www.aja.com/products/kona/transition.php.

Printing to a DV device

1. If you want to print only a portion of your project, create a time selection that includes the section of your project.
2. From the Tools menu, choose PRINT VIDEO TO TAPE. The Device Setup dialog is displayed.
3. Use the Device Setup dialog to configure your camera or deck:
   a. From the DEVICE TYPE drop-down list, choose OHCI-COMPLIANT IEEE 1394/DV.

   b. From the VIDEO drop-down list, choose the setting that matches your destination format.

      > **NOTE**
      >
      > You'll need to choose a rendering template that inserts fields to create a standard DV file if your project properties are set to 24p or if you selected the ALLOW PULLDOWN REMOVAL WHEN OPENING 24P DV checkbox on the General tab of the Preferences dialog. Use the NTSC DV 24P (INSERTING 2-3-3-2 PULLDOWN) template if you intend to bring the file back into the timeline as source material. For more information, see General Tab
      >
      > If you cleared the ALLOW PULLDOWN REMOVAL WHEN OPENING 24P DV checkbox before adding your media and your project properties are not set to 24p, your 24p video is read as 29.97 fps interlaced video (60i), so you can choose whichever NTSC DV or PAL DV template suits your project requirements.

   c. From the AUDIO drop-down list, choose the setting that matches your destination format.

   d. If necessary, drag the RECORD ENGAGE DELAY control to specify the number of frames it takes your camera or deck to switch from Record Pause to Record mode. If you're missing frames from the beginning of your file after printing to tape, increase the setting. If you see duplicated frames at the beginning of your video, decrease the setting.

   e. Click the NEXT button. The Render Settings dialog is displayed.

4. Use the Render Settings dialog to choose the format you want to use to print your video to tape.

   a. Select the ENABLE MULTICHANNEL MAPPING checkbox if you're working with multichannel source files and need to specify which channels to use in the stereo file when printing to tape. Click the CHANNELS button to choose which channels you want to render.

For example, if your video source contained 6-channel audio, you could route each channel's track to a separate bus. Then, when printing to tape, you could click the CHANNELS button and choose which bus should be printed to tape.

For more information, see Rendering Multichannel Audio Files

> **NOTE** Multichannel audio is not supported when printing toa DV device.

b. Select the USE PROJECT OUTPUT ROTATION SETTING checkbox if you're rendering a rotated project and want to use the OUTPUT ROTATION setting from the Project Properties dialog for your rendered file.

   When the checkbox is cleared, the media is rotated according to its Media Properties setting, but the project itself is unrotated—you can use this setting to proof your project on an unrotated display.

   For more information, see Creating rotated projects

c. Select the RENDER LOOP REGION ONLY checkbox if you want to print only the portion of your project that you selected in step 1.

   The checkbox is available only if you've created a time selection in the timeline.

d. Select the PRERENDER AUDIO TO PROXY FILE checkbox if you want to prerender the audio portion of your project before printing to tape.

   The PRERENDERED FILES FOLDER box displays the path to the folder where prerendered files are saved. Video files are saved to this folder so that you don't need to rerender the project every time you view it.

   If you want to change the location of the folder, click the BROWSE button and choose a new location. Changing the setting here will update the setting on the Video tab of the Project Properties dialog.

e. Click NEXT. The Leader and Trailer dialog is displayed.

5. Use the Leader and Trailer dialog to set up the data that will be printed before and after your project:

   a. Select the ADD TEST PATTERN LEADER checkbox if you want to print a test pattern before your video.
   b. From the TEST PATTERN STYLE drop-down list, choose a test pattern type and video format.
   c. Type a value in the DURATION box to determine the length of the test pattern.
   d. Select the PLAY 1 KHZ TONE WITH TEST PATTERN checkbox to add an audio test tone that will play along with the test pattern.
   e. Select the ADD BLACK LEADER checkbox and type a value in the DURATION box if you want to print black frames before your video.
   f. Select the ADD BLACK TRAILER checkbox and type a value in the DURATION box if you want to print black frames after your video.
   g. Click NEXT. The Device Control dialog is displayed.

6. Use the Device Control dialog to indicate whether VEGAS Pro will have control of your DV recorder and how you want to print to tape:

Setting	Description
Manual	Select this radio button if the application is unable to obtain device control of your deck. You will need to cue the tape and press the Record button on your deck before recording.
Crash Recording	Select this radio button if the application can perform basic device control of your deck. You will need to cue the tape to the location where you want to begin printing. The device's timecode location is displayed in the DEVICE TIMECODE box. When you click FINISH, recording will begin automatically and will stop after reaching the end of the selection or project.

Setting	Description
Auto Edit	Select this radio button if your deck supports Auto Edit/Insert Edit mode. **IMPORTANT** When using Auto Edit mode, use a striped tape to ensure continuous timecode over the portion of the tape where you plan to record. a. Select the PREVIEW ONLY checkbox if you want to preview your print-to-tape operation without engaging the deck's record head. Use PREVIEW ONLY mode to double-check and adjust your START PRINTING AT timecode setting as needed. b. The START PRINTING AT box displays the current device timecode location. You can cue the tape or type a value to indicate where you want to begin recording. The END AT box displays the frame where recording will end (much like punch-in audio recording). c. When you click NEXT, the Select Channels page is displayed. d. On the Select Channels page, select a radio button to choose which channels you want to print to tape: ● WRITE ALL RENDERED CHANNELS: select this radio button to print video and all audio channels to tape ● WRITE ONLY SELECTED CHANNELS: select this radio button if you want to choose which channels you want to print to tape. Select the checkbox for each channel you want to print.

7. Click FINISH. If you have not already prerendered, portions of your project that cannot be rendered and printed to tape in real time will be selectively prerendered. For more information, see Selectively prerender video

- If you're using MANUAL mode, a dialog will be displayed after rendering is finished. You can specify a delay time in the DELAY PLAYBACK COUNTDOWN TIMER box and select the BEEP EACH SECOND DURING COUNTDOWN checkbox if you want to count down before sending video to your device.
- If you're using CRASH RECORDING mode, your DV recorder will start and begin recording after rendering is finished.
- If you're using AUTO EDIT mode, recording will begin and end automatically at the specified timecode positions.

Printing to a tape deck connected to an SDI card

1. If you want to print only a portion of your project, create a time selection that includes the section of your project.
2. From the Tools menu, choose PRINT VIDEO TO TAPE. The Device Setup dialog is displayed.
3. Use the Device Setup dialog to configure your camera or deck:
    a. From the DEVICE TYPE drop-down list, choose AJA VIDEO DEVICE or BLACKMAGIC DESIGN DECKLINK.
    b. From the OUTPUT drop-down list, choose SDI or HDMI (if your devices supports HDMI output).
    c. From the VIDEO drop-down list, choose the setting that matches your destination format.

> **NOTE**
> You'll need to choose a rendering template that inserts fields to create a standard interlaced file if your project properties are set to 24p or if you selected the ALLOW PULLDOWN REMOVAL WHEN OPENING 24P DV checkbox on the General tab of the Preferences dialog. For more information, see General Tab
>
> If you cleared the ALLOW PULLDOWN REMOVAL WHEN OPENING 24P DV checkbox before adding your media and your project properties are not set to 24p, your 24p video is read as 29.97 fps interlaced video (60i), so you can choose whichever template suits your project requirements.

d. From the AUDIO drop-down list, choose the setting that matches your destination format.

e. Select the USE PROGRESSIVE SEGMENTED FRAME (PSF) VIDEO FORMATS checkbox if your project properties are set to a progressive-scan format and you want to preview on a device that stores and transfers progressive-scan frames by dividing fields (AJA SDI cards only).

f. Select the USE 10-BIT ENCODING checkbox if you want to print 10-bit source material for increased color resolution. Source material with gradients in the background can benefit from 10-bit encoding.

   When you use 10-bit video in your project, choose 32-BIT FLOATING POINT (VIDEO LEVELS) from the PIXEL FORMAT setting on the Video tab of the Project Properties dialog. For more information, see Setting project properties

g. If necessary, use the RECORD ENGAGE DELAY control to specify the number of frames it takes your camera or deck to switch from Record Pause to Record mode. If you're missing frames from the beginning of your file after printing to tape, increase the setting. If you see duplicated frames at the beginning of your video, decrease the setting.

h. Choose a setting from the GENLOCK drop-down list if you want to synchronize your video output with a reference signal (AJA SDI cards only).

Setting	Description
Video In	Synchronizes to the SDI input when SDI is selected in the OUTPUT drop-down list or synchronizes to the HDMI output when HDMI is selected in the OUTPUT drop-down list.
Ref In	Synchronizes to an external reference input signal.
Free Run	Ignores all input signals and uses internal timing.

i. Click the NEXT button. The Render Settings dialog is displayed.

4. Use the Render Settings dialog to choose the format you want to use to print your video to tape.
   a. Select the ENABLE MULTICHANNEL MAPPING checkbox if you want to render a file with multiple audio channels.

      For more information about rendering multichannel audio and setting up multichannel mapping, see Rendering Multichannel Audio Files

   b. Select the USE PROJECT OUTPUT ROTATION SETTING checkbox if you're rendering a rotated project and want to use the OUTPUT ROTATION setting from the Project Properties dialog for your rendered file.

      When the checkbox is cleared, the media is rotated according to its Media Properties setting, but the project itself is unrotated—you can use this setting to proof your project on an unrotated display.

      For more information, see Creating rotated projects

   c. Select the RENDER LOOP REGION ONLY checkbox if you want to print only the portion of your project that you selected in step 1.

      The checkbox is available only if you've created a time selection in the timeline.

   d. Select the PRERENDER AUDIO TO PROXY FILE checkbox if you want to prerender the audio portion of your project before printing to tape.

      The PRERENDERED FILES FOLDER box displays the path to the folder where prerendered files are saved. video files are saved to this folder so that you don't need to rerender the project every time you view it.

   If you want to change the location of the folder, click the BROWSE button and choose a new location. Changing the setting here will update the setting on the Video tab of the Project Properties dialog.

   e. Click NEXT. The Leader and Trailer dialog is displayed.

5. Use the Leader and Trailer dialog to set up the data that will be printed before and after your project:
   a. Select the ADD TEST PATTERN LEADER checkbox if you want to print a test pattern before your video.
   b. From the TEST PATTERN STYLE drop-down list, choose a test pattern type and video format.
   c. Type a value in the DURATION box to determine the length of the test pattern.
   d. Select the PLAY 1 KHZ TONE WITH TEST PATTERN checkbox to add an audio test tone that will play along with the test pattern.
   e. Select the ADD BLACK LEADER checkbox and type a value in the DURATION box if you want to print black frames before your video.
   f. Select the ADD BLACK TRAILER checkbox and type a value in the DURATION box if you want to print black frames after your video.
   g. Click NEXT. The Device Control dialog is displayed.
6. Use the Device Control dialog to indicate whether VEGAS Pro will have control of your deck:

Setting	Description
Manual	Select this radio button if the application is unable to obtain device control of your deck. You will need to cue the tape and press the Record button on your deck before recording.
Crash Recording	Select this radio button if the application can perform basic device control of your deck. You will need to cue the tape to the location where you want to begin printing. The device's timecode location is displayed in the DEVICE TIMECODE box. When you click FINISH, recording will begin automatically and will stop after reaching the end of the selection or project.

Setting	Description
Auto Edit	Select this radio button if your deck supports Auto Edit/Insert Edit mode. **IMPORTANT** When using Auto Edit mode, use a striped tape to ensure continuous timecode over the portion of the tape where you plan to record. a. Select the PREVIEW ONLY checkbox if you want to preview your print-to-tape operation without engaging the deck's record head. Use PREVIEW ONLY mode to double-check and adjust your START PRINTING AT timecode setting as needed. b. The START PRINTING AT box displays the current device timecode location. You can cue the tape or type a value to indicate where you want to begin recording. The END AT box displays the frame where recording will end (much like punch-in audio recording). c. When you click NEXT, the Select Channels page is displayed. d. On the Select Channels page, select a radio button to choose which channels you want to print to tape: ● WRITE ALL RENDERED CHANNELS: select this radio button to print video and all audio channels to tape ● WRITE ONLY SELECTED CHANNELS: select this radio button if you want to choose which channels you want to print to tape. Select the checkbox for each channel you want to print.

7. Click FINISH. If you have not already prerendered, portions of your project that cannot be rendered and printed to tape in real time will be selectively prerendered. ⓘ For more information, see [Selectively prerender video](#)

- If you're using MANUAL mode, a dialog will be displayed after rendering is finished. You can enter a delay time in the DELAY box and select the BEEP checkbox if you want to count down before sending video to your deck.
- If you're using CRASH RECORDING or AUTO EDIT mode, your deck will begin recording after rendering is finished.
- If you're using AUTO EDIT mode, recording will begin and end automatically at the specified timecode positions.

Printing video to HDV tape

From the Tools menu, choose PRINT VIDEO TO HDV TAPE to print your project to an HDV camera or deck.

Printing to tape from the timeline

Use this procedure when you're creating an HDV project on the timeline and need to render a MPEG2 transport stream and print it to HDV tape.

1. Load your HDV project.
2. If you want to print only a portion of your project, create a time selection that includes the section of your project.
3. From the Tools menu, choose PRINT VIDEO TO HDV TAPE. The HDV Print to Tape - Device page is displayed.
4. Choose your HDV camera or deck from the DEVICE drop-down list.
5. Click NEXT. The HDV Print to Tape - Select Format/File page is displayed.
6. Choose render settings:
    a. Select the RENDER FORMAT radio button.
    b. In the FILE PATH box, type the path to the file you want to render, or click the BROWSE button to browse to the folder you want to use and then type a file name.

   c. From the TEMPLATE drop-down list, choose the setting that matches your destination format. This list will include only formats that are supported by the selected device.

      Information about the selected rendering template is displayed in the DESCRIPTION box.

   d. Select the RENDER LOOP REGION ONLY checkbox if you want to print only the portion of your project that you selected in step 2.

      The checkbox is available only if you've created a time selection in the timeline.

   e. Select the DELETE FILE AFTER PRINT checkbox if you want to delete the rendered file after the print-to-tape operation is finished.

   f. Select the USE PROJECT OUTPUT ROTATION SETTING checkbox if you're rendering a rotated project and want to use the OUTPUT ROTATION setting from the Project Properties dialog for your rendered file.

      When the checkbox is cleared, the media is rotated according to its Media Properties setting, but the project itself is unrotated—you can use this setting to proof your project on an unrotated display.

      For more information, see Creating rotated projects

   g. Click NEXT. The HDV Print to Tape - Device Control page is displayed.

7. Use the Device Control dialog to indicate whether VEGAS Pro will have control of your HDV recorder and how you want to print to tape:
   - Select MANUAL if your HDV device is not OHCI-compliant or if the application is unable to obtain device control of your HDV recorder. You will need to cue the tape and press the Record button on your HDV recorder before recording.
   - Select CRASH RECORDING if you are using an OHCI-compliant IEEE-1394 HDV device and the application is able to obtain device control of your HDV recorder.

     You will need to cue the tape to the location where you want to begin printing. The device's timecode location is displayed in the DEVICE TIMECODE box.

When you click FINISH, recording will begin automatically and will stop after reaching the end of the selection or project.

8. Click FINISH. Your project will be rendered to the file you specified in step 6.
   - If you're using MANUAL mode, a dialog will be displayed after rendering is finished. You can specify a delay time in the DELAY PLAYBACK COUNTDOWN TIMER box and select the BEEP EACH SECOND DURING COUNTDOWN checkbox if you want to count down before sending video to your device.
   - If you're using CRASH RECORDING mode, your HDV recorder will start and begin recording after rendering is finished.

Printing a rendered file

Use this procedure when you have a rendered MPEG 2 transport stream that you want to print to HDV tape.

> **IMPORTANT** If you are printing a rendered file to HDV tape, the file must precisely conform to the target HDV device and file type requirements, or the print-to-tape operation will fail. Rendering using the provided HDV MPEG-2 render templates—unmodified in any way—is required to successfully print to HDV tape.

1. Load your HDV project.
2. If you want to print only a portion of your project, create a time selection that includes the section of your project.
3. From the Tools menu, choose PRINT VIDEO TO HDV TAPE. The HDV Print to Tape - Device page is displayed.
4. Choose your HDV camera or deck from the DEVICE drop-down list.
5. Click NEXT. The HDV Print to Tape - Select Format/File page is displayed.
6. Choose the file you want to print:
   a. Select the USE AN EXISTING FILE radio button.
   b. In the FILE PATH box, type the path to the file you want to print, or click the BROWSE button to choose the file you want to print.
7. Click NEXT. The HDV Print to Tape - Device Control page is displayed.

8. Use the Device Control dialog to indicate whether VEGAS Pro will have control of your HDV recorder and how you want to print to tape:
    - Select MANUAL if your HDV device is not OHCI-compliant or if the application is unable to obtain device control of your HDV recorder. You will need to cue the tape and press the Record button on your HDV recorder before recording.
    - Select CRASH RECORDING if you are using an OHCI-compliant IEEE-1394 HDV device and the application is able to obtain device control of your HDV recorder.

      You will need to cue the tape to the location where you want to begin printing. The device's timecode location is displayed in the DEVICE TIMECODE box.

      When you click FINISH, recording will begin automatically and will stop after reaching the end of the selection or project.
9. Click FINISH.
    - If you're using MANUAL mode, a dialog will be displayed before printing begins. You can specify a delay time in the DELAY PLAYBACK COUNTDOWN TIMER box and select the BEEP EACH SECOND DURING COUNTDOWN checkbox if you want to count down before sending video to your device.
    - If you're using CRASH RECORDING mode, your HDV recorder will start and begin recording after you click the FINISH button.

Automation and Scripting

Using automation

Automation allows you to control audio and video levels, panning, and effect parameters over time. You can create fades, apply stereo panning, and add effects with parameters that change throughout your project.

Automation is represented on the VEGAS® Pro timeline as an envelope or set of keyframes. You can create automation by adding envelopes or keyframes to your tracks (including bus tracks), or you can record automation parameters by adjusting controls in the VEGAS Pro interface (or on a control surface) during playback. For more information about using a control surface, see Using a control surface

> **IMPORTANT**
> Gain, level, and panning controls can adjust automation (dynamic) settings, or they can function as trim (nonautomated) controls.
>
> The trim setting is added to the automation settings so your envelope or keyframe values are preserved, but with an offset applied. For example, setting an audio track's trim control to -3 dB has the same effect as decreasing every envelope point by 3 dB.
>
> If your automation is not behaving as expected, you may have applied a trim value that is offsetting your automation settings.
>
> When a control is set to adjust trim levels, its handle is displayed as a ▣. When a control is set to adjust automation levels, it is displayed as a ■.

Audio track automation

With audio track automation, you can create fades, apply stereo panning, and add effects with parameters or send levels that change over time.

Track automation will always affect all events on the track. This means that any event envelopes will be calculated after the track automation.

To adjust track automation using the controls in the track header, select the AUTOMATION SETTINGS button . When AUTOMATION SETTINGS is not selected, the controls adjust static (trim) levels.

> **TIP** Choose a fade type from the AUDIO DEFAULT drop-down list on the Editing tab of the Preferences dialog to set the default fade type that will be used when you add volume and panning automation envelopes. This setting is used only when you create new envelopes—when you add a point to an existing envelope, the new point always uses the same fade type as the preceding envelope point. Also, this setting is not used for event envelopes. For more information, see Editing Tab

Applying mute automation

1. Select an audio track.
2. From the Insert menu, choose AUDIO ENVELOPES, or right-click in the track list and choose INSERT/REMOVE ENVELOPE from the shortcut menu.
3. From the submenu, choose MUTE. A check mark is displayed next to the command, and an envelope is added to the timeline.

   Mute automation is either on or off with no fade between the on and off states. If you want to use fades, apply volume automation.
4. You can adjust the automation by editing the envelope in the timeline or by clicking the MUTE AUTOMATION button in the track header. For more information, see Adjusting envelopes

   The button behaves differently depending on the track automation recording mode. For more information, see Recording track envelope and keyframe automation

   - When the track automation mode is set to OFF, the button mutes the entire track.

- When the track has a mute envelope and the track automation mode is set to READ, the button changes state to reflect the envelope setting during playback but cannot be adjusted.
- When the track has a mute envelope and the track automation mode is set to TOUCH or LATCH, the button edits the envelope setting at the cursor position.

> **NOTE**
> When you apply mute automation to a track, it's possible to have a track that is muted and soloed simultaneously if you use the MUTE and SOLO buttons in the track header. The mute state overrides the solo state:
>
> - If a track's SOLO button is selected, the track is included in the solo group, but it will be muted whenever the mute automation is set to mute the track.
> - If the track's MUTE button is selected, the track is muted regardless of the mute automation settings.

Applying volume or pan automation

1. Select an audio track.
2. From the Insert menu, choose AUDIO ENVELOPES, or right-click in the track list and choose INSERT/REMOVE ENVELOPE from the shortcut menu.
3. From the submenu, choose VOLUME or PAN. A check mark is displayed next to the command, and an envelope is added to the timeline.
4. If you want to change the track's volume or pan setting throughout the track, edit the envelope in the timeline. For more information, see Adjusting envelopes

   > **NOTE** Panning envelopes will use the current panning mode for the PAN slider in the track list. For more information about panning modes, see Audio panning modes

5. If you want to change volume or pan settings by recording automation, select the AUTOMATION SETTINGS button in the track header. The VOLUME fader or PAN slider handle is displayed as a in automation mode.
6. Drag the VOLUME fader or PAN slider to edit automation settings at the cursor position. You can also adjust automation by editing the envelope in the timeline.

   For more information, see Adjusting envelopes

   The control behaves differently depending on the track's automation recording mode. For more information, see Recording track envelope and keyframe automation

   - When the track automation mode is set to OFF, the control adjusts the level of the entire track. In this mode, the automation control acts as a second trim control.
   - When the track has a volume or pan envelope and the track automation mode is set to READ, the control will follow the envelope during playback but cannot be adjusted.
   - When the track automation mode is set to TOUCH or LATCH, the control edits the envelope setting at the cursor position. If the track does not have an envelope, an envelope will be added when you adjust the control.

   If multiple tracks are selected, all selected tracks are adjusted.

Applying assignable effects send automation

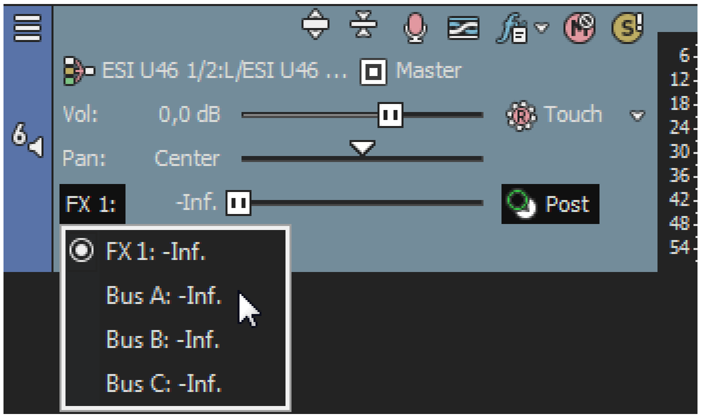
You can use assignable effects automation to vary the level of a track sent to an assignable effects chain. Before you can add an assignable effects envelope, you'll need to add an assignable effects chain to your project. For more information, see Adding an assignable effects chain

1. Select an audio track.
2. From the Insert menu, choose AUDIO ENVELOPES, or right-click in the track list and choose INSERT/REMOVE ENVELOPE from the shortcut menu.

3. From the submenu, choose the effects chain where you want to send the selected track. A check mark is displayed for each assignable effects chain that is automated for the selected track.

4. Select the AUTOMATION SETTINGS button in the track header. The fader thumb is displayed as a in automation mode. You can also edit automation by editing the envelope in the timeline. For more information, see [Adjusting envelopes]()

5. Click the label on the multipurpose slider and choose an assignable effects chain from the menu.



6. Drag the FX fader to control the level of the track sent to each of the assignable FX chains that you have created.

   The fader behaves differently depending on the track's automation recording mode. For more information, see [Recording track envelope and keyframe automation]()

   - When the track has an assignable effects envelope and the track automation mode is set to OFF, the fader adjusts the send level of the entire track. In this mode, the automation control acts as a second trim control.
   - When the track has an assignable effects envelope and the track automation mode is set to READ, the fader will follow the envelope during playback but cannot be adjusted.

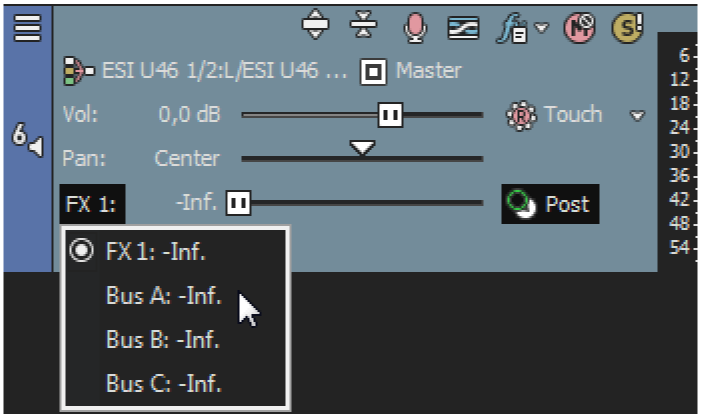
- When the track has an assignable effects envelope and the track automation mode is set to TOUCH or LATCH, the fader edits the envelope setting at the cursor position. If the track does not have an envelope, one will be created when you adjust the fader.

If multiple tracks are selected, all selectedtracks are adjusted.

Applying bus send automation

You can use bus envelopes to vary the level of a track sent to a bus. Before you can add a bus envelope, you'll need to specify the number of busses for your project. For more information, see Adding audio busses

1. Select an audio track.
2. From the Insert menu, choose AUDIO ENVELOPES, or right-click in the track list and choose INSERT/REMOVE ENVELOPE from the shortcut menu.
3. From the submenu, choose the bus where you want to send the selected track. A check mark is displayed for each bus send level that is automated for the selected track.
4. Select the AUTOMATION SETTINGS button in the track header. The fader thumb is displayed as a in automation mode. You can also adjust automation by editing the envelope in the timeline. For more information, see Adjusting envelopes
5. Click the label on the multipurpose slider and choose a bus from the menu.



6. Drag the fader to control the level of the track sent to the selected bus. Dragging the fader to the left cuts the volume; dragging to the right boosts the volume.

   The fader behaves differently depending on the track's automation recording mode. For more information, see [Recording track envelope and keyframe automation]()

   - When the track automation mode is set to OFF, the fader adjusts the send level of the entire track. In this mode, the automation control acts as a second trim control.
   - When the track has a bus envelope and the track automation mode is set to READ, the fader will follow the envelope during playback but cannot be adjusted.
   - When the track has a bus envelope and the track automation mode is set to TOUCH orLATCH, the fader edits the envelope setting at the cursor position. If the track does not have an envelope, one will be created when you adjust the fader.

   If multiple tracks are selected, all selected tracks are adjusted.

Adding or removing track effect automation

If a plug-in supports automation, you can dynamically adjust effect parameters over time.

For more information, see [Automating audio effect parameters]()

Hiding envelopes

From the View menu, choose AUDIO ENVELOPES, and choose the envelope you want to hide from the submenu. Hiding an envelope simply removes the line from the timeline while it retains the playback properties.

> **TIP** From the View menu, choose SHOW ENVELOPES (or press Ctrl+Shift+E) to toggle the display of all envelopes in the timeline.

If you've added effect automation envelopes to a track, the track can get cluttered. Click the down arrow next to the TRACK FX button and choose an envelope from the drop-down list to select which envelope you want to display.

Locking envelopes to events

From the Options menu, choose LOCK ENVELOPES TO EVENTS if you want envelope points and position to move with an event when it is moved along the timeline.

> **NOTE** This option also locks track-level keyframes to the events on the track. When keyframes are locked, you can move events along the timeline, and their associated keyframes move with them.

Video track automation

Video track envelopes allow you to vary compositing levels or fade a track between two colors.

A track envelope will always affect all events on the track. This means that any event envelopes will be calculated after the track envelope.

To adjust track automation using the controls in the track header, select the AUTOMATION SETTINGS button. When AUTOMATION SETTINGS is not selected, the LEVEL slider adjusts static (trim) levels, and the FADE slider is not displayed.

> **TIP** Choose a fade type from the VIDEO DEFAULT drop-down list on the Editing tab of the Preferences dialog to set the default fade type that will be used when you add fade-to-color, composite level, and event velocity envelopes. This setting is not used for track motion or keyframe envelopes. For more information, see Editing Tab

Applying mute automation

1. Select a video track.
2. From the Insert menu, choose VIDEO ENVELOPES, or right-click in the track list and choose INSERT/REMOVE ENVELOPE from the shortcut menu.
3. From the submenu, choose MUTE. A check mark is displayed next to the command, and an envelope is added to the timeline.
4. You can adjust the automation by editing the envelope in the timeline or by clicking the MUTE AUTOMATION button in the track header. For more information, see Adjusting envelopes

   Click the AUTOMATION SETTINGS button in the track header to toggle between Mute and Mute Automation modes.

   > **NOTE**
   > When you apply mute automation to a track, it's possible to have a track that is muted and soloed simultaneously if you use the MUTE and SOLO buttons in the track header. The mute state overrides the solo state:
   >
   > - If a track's SOLO button is selected, the track is included in the solo group, but it will be muted whenever the mute automation is set to mute the track.
   > - If the track's MUTE button is selected, the track is muted regardless of the mute automation settings.

Applying composite-level automation

Composite-level automation allows you to vary the opacity/transparency of a video track and has a similar effect to adjusting the LEVEL slider in the track header.

The COMPOSITING MODE button determines how the transparency in a video track is generated. Since lower tracks show through higher tracks, it is the compositing mode of the higher track that determines how much of the lower track shows though. The compositing mode of the lowest video track has no effect on a project. For more information about compositing, see Compositing and masks

1. Select a video track.
2. From the Insert menu, choose VIDEO ENVELOPES, or right-click in the track list and choose INSERT/REMOVE ENVELOPE from the shortcut menu.
3. From the submenu, choose TRACK COMPOSITE LEVEL.

   If the track already contains a composite level envelope, it will be removed. If the track does not contain a composite-level envelope, it will be added with a setting of 100% for the duration of the track.
4. If you want to change the track's composite level throughout the track, edit the envelope in the timeline. For more information, see Adjusting envelopes
5. If you want to change the composite setting by recording automation, select the AUTOMATION SETTINGS button in the track header. The slider thumb is displayed as a in automation mode.
6. Drag the LEVEL slider.

   The slider behaves differently if the track has a composite level envelope and when you change the track automation recording mode. For more information, see Recording track envelope and keyframe automation

   - When the track automation mode is set to OFF, the slider adjusts the composite level of the entire track. In this mode, the automation control acts as a second trim control.

- When the track has a composite level envelope and the track automation mode is set to READ, the slider will follow the envelope during playback but cannot be adjusted.
- When the track automation mode is set to TOUCH or LATCH, the slider edits the envelope setting at the cursor position. If the track does not have a composite level envelope, an envelope will be added when you adjust the slider.

Applying fade-to-color automation and set fade colors

Fade-to-color automation is used to fade a track between two colors. It can be used to fade a track to or from black, and if applied to the top video track, you can fade the entire project.

Adding the envelope

The fade color is chosen by moving the envelope towards the top or bottom of the track. You can add points (nodes) to automate the fade.

1. Select a video track.
2. From the Insert menu, choose VIDEO ENVELOPES, or right-click in the Track List and choose INSERT/REMOVE ENVELOPE from the shortcut menu.
3. From the submenu, choose TRACK FADE TO COLOR.

   If the track already contains a fade-to-color envelope, it will be removed. If the track does not contain a fade-to-color envelope, it will be added with a setting of NO COLOR (0%) for the duration of the track.
4. If you want to change the fade-to-color setting throughout the track, edit the envelope in the timeline. For more information, see Adjusting envelopes
5. If you want to change the fade-to-color envelope by recording automation, select the AUTOMATION SETTINGS button in the track header to display automation controls. The FADE slider is available only in automation mode.
6. Drag the FADE slider.

The slider behaves differently when you change the track automation recording mode. For more information, see Recording track envelope and keyframe automation

- When the track automation mode is set to OFF, the slider adjusts the fade level of the entire track.
- When the track automation mode is set to READ, the slider will follow the envelope during playback but cannot be adjusted.
- When the track automation mode is set to TOUCH or LATCH, the slider edits the envelope setting at the cursor position.

Setting fade colors

The default fade colors are determined by the TRACK FADE TOP and TRACK FADE BOTTOM controls on the Video tab of the Preferences dialog. For more information, see Video Tab

1. To change the TOP or BOTTOM color for a track, right-click the track header and choose FADE COLORS from the shortcut menu.
2. Choose TOP or BOTTOM from the submenu. A color picker is displayed.
3. Use the color picker to specify the new color.
4. Click OK.

Hiding envelopes

From the View menu, choose VIDEO ENVELOPES and select the envelope you want to hide.

Hiding an envelope simply removes the line from the timeline while retaining automation properties.

> **TIP** From the View menu, choose SHOW ENVELOPES (or press Ctrl+Shift+E) to toggle the display of all envelopes in the timeline.

Locking envelopes to events

From the Options menu, choose LOCK ENVELOPES TO EVENTS if you want envelope points and position to move with an event when it is moved along the timeline.

> **NOTE** This option also locks track-level keyframes to the events on the track. When keyframes are locked, you can move events along the timeline, and their associated keyframes move with them.

Automating audio effect parameters

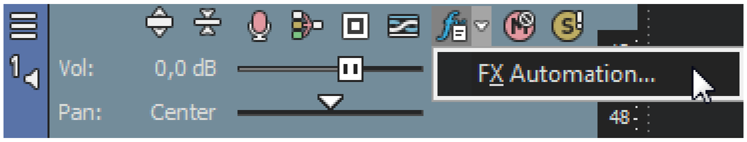
When you add an effect that supports automation, you can use automation to dynamically adjust effect parameters.

Automation for audio track effects is applied on the audio track. Automation for bus effects and assignable effects is applied on the appropriate bus track.

For more information about audio effects, see Adding audio effectsUsing bus effects and Using assignable effects

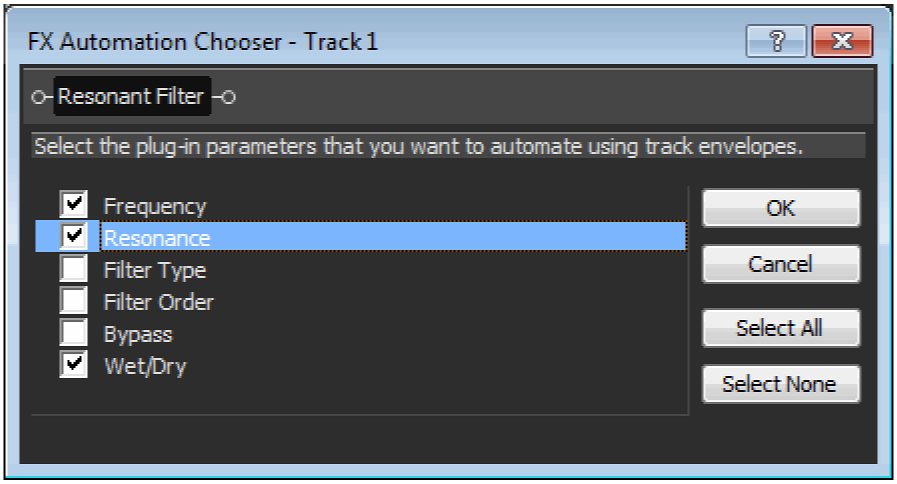
Adding effect automation

1. Click the down arrow next to the TRACK FX button and choose FX AUTOMATION to display the FX Automation Chooser.



> **NOTE** If no track effects exist, clicking the TRACK FX button will display the Plug-In Chooser. Effects that can be automated are indicated by the icon in the chooser. The first time you select a plug-in, the application will determine whether it can be automated and will update the plug-in's icon and add it to the AUTOMATABLEfolder in the Plug-In Chooser.

2. Click an effect button at the top of the FX Automation Chooser. A list of the effect's automatable parameters is displayed:



Select the plug-in parameters that you want to automate using track envelopes.

☑ Frequency
☑ Resonance
☐ Filter Type
☐ Filter Order
☐ Bypass
☑ Wet/Dry

3. Select the checkbox for each parameter that you want to control with an envelope.

> **TIP** If you're working with a 5.1 surround project, you can select the ENABLE check boxes to determine which channels will be affected by the plug-in. An automation envelope is added to the timeline for each selected channelso you can enable or bypass the plug-in during the project.

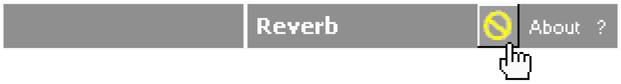
   If you want to use distinct plug-in settings for each channel (separate EQ settings for the front and surround speakers, for example), you can add multiple instances of the plug-in to the track effects chain and select the ENABLE checkboxes for the channels you want each instance of the plug-in to affect.

4. Click OK to close the FX Automation Chooser. An envelope is added to the track for each parameter that you selected in the FX Automation Chooser.

Adjusting effect automation parameters

You can adjust automated effect parameters by editing the envelopes in the timeline or by recording automation with the controls in the effects window. For more information, see Adjusting envelopes and Recording track envelope and keyframe automation

If you've enabled the BYPASS parameter for a plug-in, you can click the BYPASS button in the plug-in's banner to toggle the Bypass envelope at the cursor position.



> **NOTE** When you automate an effect’s frequency parameter — such as the frequency parameters in the track EQ effect — you may notice that the frequency changes are more apparent when moving through the lower frequencies. This is because frequency scales in track EQ and other plug-ins use a logarithmic scale, but effect automation uses linear interpolation.

To make the automated frequency changes sound more natural, change the fade curve types to change the interpolation rates between envelope points. For high-to-low frequency sweeps, use a fast fade curve; for low-to-high frequency sweeps, use a slow curve. For more information about changing fade curves, see Adjusting envelopes

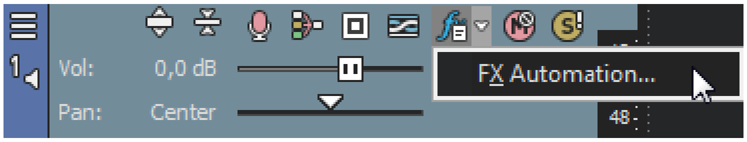
Bypassing effect automation

Toggle the BYPASS FX AUTOMATION button in the effects window to enable or bypass automation envelopes:

- After you've added effect automation envelopes, the BYPASS FX AUTOMATION button is deselected, and effect parameters are automated using the envelope settings.
- When the button is selected, effect automation envelopes are ignored and the effect's initial state is used for the duration of the track.
- If you delete all automation envelopes from a plug-in, the BYPASS FX AUTOMATION button is unavailable.

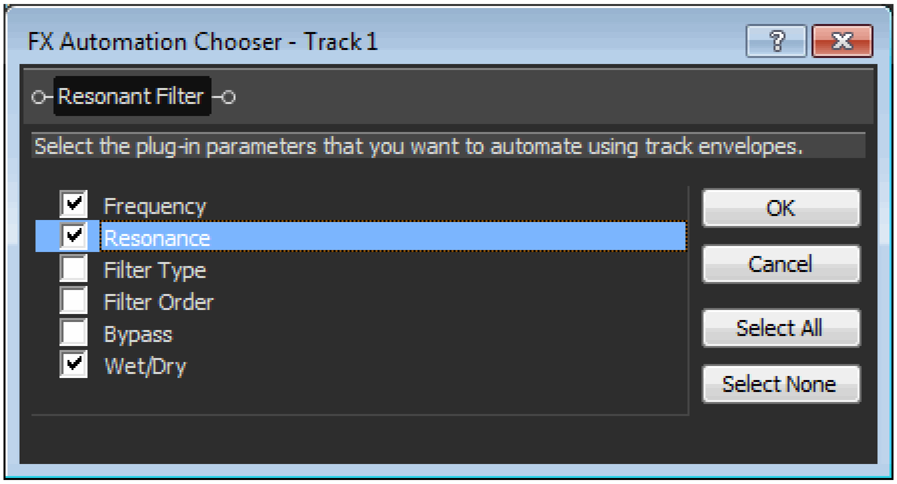
Removing effect automation

1. Click the down arrow next to the TRACK FX button and choose FX AUTOMATION to display the FX Automation Chooser.



> **NOTE** If no track effects exist, clicking the TRACK FX button will display the Plug-In Chooser. Effects that can be automated are indicated by the icon in the chooser. The first time you select a plug-in, the application will determine whether it can be automated and will update the plug-in's icon and add it to the AUTOMATABLEfolder in the Plug-In Chooser.

2. Click an effect button at the top of the FX Automation Chooser. A list of the effect's automatable parameters is displayed:



Select the plug-in parameters that you want to automate using track envelopes.

☑ Frequency
☑ Resonance
☐ Filter Type
☐ Filter Order
☐ Bypass
☑ Wet/Dry

3. Clear the checkbox for the automation you want to remove.

4. Click OK to close the FX Automation Chooser. The envelope is removed from the timeline for each checkbox that you cleared in the FX Automation Chooser.

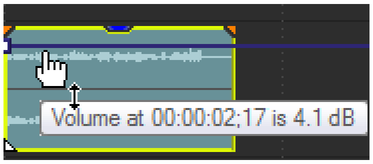
Adjusting envelopes

When the Normal Edit or Envelope , tool is selected, you can add, remove, or adjust envelope points.

> **NOTE** Events cannot be moved or edited when the Envelope tool is selected.

Adjusting an envelope

By default, a new envelope will contain a single envelope point. If you want to adjust the overall level of an envelope, drag the envelope up or down. A floating ToolTip will show you the envelope's current setting:



Volume at 00:00:02;17 is 4.1 dB

If an envelope has multiple points, you can drag each point, or you can drag envelope segments up or down.

TIP

- If snapping is enabled, envelope points will snap to snap points. Hold Shift to temporarily suspend snapping. ℹ For more information, see Enable snapping
- Hold Ctrl while dragging an envelope point or segment to adjust the value in fine increments without changing the envelope points' timeline positions.
- Hold Ctrl+Alt while dragging an envelope point or segment to adjust the value in normal increments without changing the envelope points' timeline positions.
- Hold Alt while dragging an envelope point to move the point's timeline position without changing its value.
- With the Envelope tool, you can drag along the timeline to select multiple envelope points in the selected track.

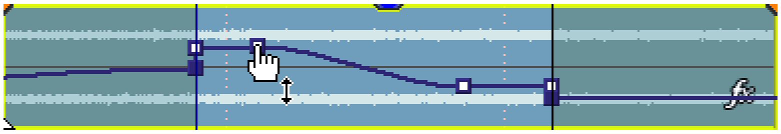
Adjusting envelope points within a time selection

When you drag envelope points within a time selection, all envelope points within the selection are adjusted, and a fade can be applied to the beginning and end of the selection to smooth the transition.

1. Create a time selection.

   For more information, see [Creating selections and positioning the cursor]()

2. Drag an envelope point or segment within the selection. All envelope points within the selection are adjusted as you drag, and fades are applied to the beginning and end of the selection (additional envelope points are created as necessary):

   You can use the Editing page of the Preferences dialog to set the default length and alignment for these fades.

   Clear the TIME SELECTION ENVELOPE FADES checkbox on the Editing page of the Preferences dialog if you want to edit envelope points individually.

   For more information, see [Editing Tab]()

Adding envelope points

To create more complex envelopes, you will need to add points. To add an envelope point, double-click the envelope. A new envelope point will be added which can be dragged and positioned as necessary.

To delete a point, right-click it and choose DELETE from the shortcut menu.

Drawing envelope points (envelope brush)

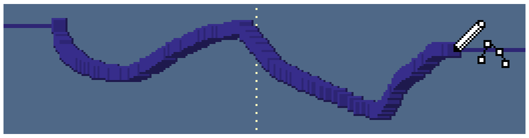
To create an envelope quickly, you can draw freehand envelope curves in the timeline.

1. With the Normal Edit or Envelope tool active, hover over an envelope.
2. Hold Shift, and then click and drag over the envelope. The cursor is displayed as a .

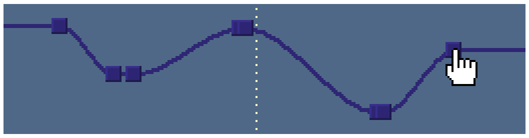
   As you drag, a trail of envelope points is created.
3. Release the mouse button when you're finished drawing.

If the SMOOTH AND THIN AUTOMATION DATA AFTER RECORDING OR DRAWING checkbox is selected on the External Control & Automation tab of the Preferences dialog, the number of envelope points will be reduced when you release the mouse.

For more information, see [External Control & Automation Tab]



Unthinned envelope



Thinned envelope

Thinning envelope points

Thinning envelope points decreases the number of points on an envelope while retaining its overall settings.

Right-click an envelope and choose THIN ALL POINTS from the shortcut menu to thin the entire envelope.

To apply thinning to a section of the envelope, create a time selection, right-click the envelope, and then choose THIN SELECTED POINTS from the shortcut menu.

> **NOTE** Thinning is intended to reduce the number of envelope points created through automation recording and will have little or no effect if you create envelopes by adding and editing points manually.

Flipping an envelope

You can flip an envelope to invert the envelope around its center. Volume, panning, bus, and assignable effects envelopes can be flipped.

Flipping all points

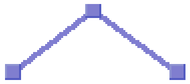
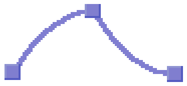
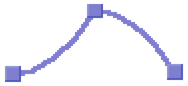
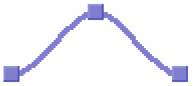
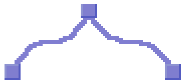
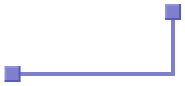
1. Right-click an envelope or a point. A shortcut menu is displayed.
2. Choose FLIP ALL POINTS from the shortcut menu.

Flipping selected points

1. Create a time selection with the Normal Edit ➤ or the Envelope tool ⊡.
2. Right-click an envelope in the time selection. A shortcut menu is displayed.
3. Choose FLIP SELECTED POINTS from the shortcut menu.

Setting fade properties

You can adjust the fade curve for each envelope segment individually. To change the fade curve, right-click an envelope segment and choose a command from the shortcut menu.

Fade Type	Fade In/Out Envelope
Linear Fade	
Fast Fade	
Slow Fade	
Smooth Fade	
Sharp Fade	
Hold	

Cutting, copying, and pasting envelope points

1. Select the Envelope tool.
2. Select the envelope points you want to copy:
    a. Create a time selection that contains the envelope points you want to copy.
    b. Click the envelope you want to copy.

> **TIP** If the envelope isn't displayed, you can right-click the track, choose SHOW ENVELOPES from the shortcut menu, and then choose an envelope from the submenu.

3. From the Edit menu, choose COPY.
4. Select the envelope where you want to paste the envelope points:

   a. Click within a track to select it.
   b. Insert an audio or video envelope if needed. For more information, see Audio track automation or Video track automation
   c. Click to select the envelope where you want to paste the selected points.
   d. Click to position the cursor where you want the envelope to start.
5. From the Edit menu, choose PASTE.

Copying an envelope to another track

1. Select the Envelope tool.
2. Select the envelope you want to copy:
   a. Double-click above the time ruler to create a time selection that matches the length of your project.
   b. Click the envelope you want to copy.

> **TIP** If the envelope isn't displayed, you can right-click the track, choose SHOW ENVELOPES from the shortcut menu, and then choose an envelope from the submenu.

3. From the Edit menu, choose COPY.
4. Select the envelope where you want to paste the envelope points:
   a. Click within a track to select it.
   b. Insert an audio or video envelope if needed. For more information, see Audio track automation or Video track automation
   c. Click to select the envelope where you want to paste the selected points.

    d. Click GO TO START ⏮ if you want the envelope to appear exactly as it was in the original track, or click to position the cursor where you want the envelope to start.

5. From the Edit menu, choose PASTE.

Recording track envelope and keyframe automation

Automation recording allows you to edit envelope and keyframe settings by using the controls in the VEGAS Pro interface. When combined with a control surface, you can create fades and adjust control parameters with a level of control that only a tangible control can provide.

For more information, see Using a control surface

Automation recording is available for the following settings:

- Audio track envelopes (using the controls in the track header)
- Audio track effect parameters for automatable effects (using the controls in the Track FX window)
- Bus and assignable effects output and panning levels (using the controls in the Mixing Console window or bus track header)
- Surround panning keyframes
- Video track envelopes (using the controls in the track header)
- Video track effect parameters (using the controls in the Video Track FX window)
- Custom composite mode plug-in settings (using the controls in Parent Track Composite Mode or Track Composite Mode window when SYNC CURSOR 🔒 is selected)
- Track-level mask generator plug-in settings (using the controls in the Video Track FX window when SYNC CURSOR 🔒 is selected)

> **TIP** If you want to thin envelope points after recording automation, you can select the SMOOTH AND THIN AUTOMATION DATA AFTER RECORDING checkbox on the External Control & Automation tab of the Preferences dialog or right-click the envelope and choose THIN ALL POINTS or THIN SELECTED POINTS from the shortcut menu. For more information, see External Control & Automation Tab

Record automation settings

1. Add an envelope or automatable/keyframeable effect to a track.

   For automatable audio track effects, you must add an effect automation envelope for each parameter you want to automate. For more information, see Automating audio effect parameters

2. Select the AUTOMATION SETTINGS button.

   > **TIP** To toggle automation controls for all tracks, press Ctrl+A before selecting the AUTOMATIONSETTINGS button.

3. Click the ▾ next to the AUTOMATION SETTINGS button and choose AUTOMATION WRITE (TOUCH) or AUTOMATION WRITE (LATCH) from the menu.

Automation Recording Mode	Track Icon	Description
Automation Write (Touch)	®	Envelope points or keyframes are created only while a control is being adjusted. When you stop adjusting the control, automation recording stops and the existing envelope points/keyframes are unaffected.
Automation Write (Latch)	®	Envelope points or keyframes are created when you change a control setting, and recording continues until you stop playback. When you stop adjusting the control, the control's current setting overwrites the existing envelope points/keyframes.

4. Click to position the cursor in the timeline, and click the PLAY button ▶ to start playback.
5. Adjust the control that corresponds to the envelope point or keyframe you want to adjust.

   During playback, adjusting a control will create envelope points or keyframes at the cursor position. As long as you're adjusting the control, new envelope points/keyframes will be created for each change of the play cursor's position.

6. Click STOP ■ to end playback and stop recording automation.

Edit sections of your recorded settings in Touch mode

In Touch recording mode, envelope points or keyframes are created only while a control is being adjusted. When you stop adjusting the control, automation recording stops and the existing envelope points/keyframes are unaffected.

Use Touch mode for touching up sections of your recorded automation settings.

1. Select the AUTOMATION SETTINGS button Ⓡ.

   > **TIP** To toggle automation controls for all tracks, press Ctrl+A before selecting the AUTOMATION SETTINGS button.

2. Click the ▾ next to the AUTOMATION SETTINGS button and choose AUTOMATION WRITE (TOUCH) from the menu. The icon in the track header is displayed as a Ⓡ.
3. Click to position the cursor in the timeline, and click the PLAY button ▶ to start playback.
4. When you're ready to start editing, adjust the control that corresponds to the envelope point or keyframe you want to adjust.

   Envelope points/keyframes are updated at the cursor position, and when you stop adjusting the control, the original settings are preserved.

5. Click STOP ■ to end playback and stop recording automation.

Overwrite recorded settings in Latch mode

In Latch mode, envelope points or keyframes are created when you change a control setting, and recording continues until you stop playback. When you stop adjusting the control, the control's current setting overwrites the existing envelope points/keyframes.

Use Latch mode to overwrite automation settings with new values.

1. Select the AUTOMATION SETTINGS button Ⓡ.

   > **TIP** To toggle automation controls for all tracks, press Ctrl+A before selecting the AUTOMATIONSETTINGS button.

2. Click the ▾ next to the AUTOMATION SETTINGS button and choose AUTOMATION WRITE (LATCH) from the menu. The icon in the track header is displayed as a Ⓡ.

3. Click to position the cursor in the timeline, and click the PLAY button ▶ to start playback.
4. When you're ready to start editing, adjust the control that corresponds to the envelope point or keyframe you want to adjust.

   Envelope points/keyframes are updated at the cursor position until you stop playback.

5. Click STOP ■ to end playback and stop recording automation.

Edit individual envelope points or keyframes

Editing individual envelope points or keyframes gives you fine control over your recorded settings.

1. Select the AUTOMATION SETTINGS button on the track you want to edit.
2. Click the ▾ next to the AUTOMATION SETTINGS button and choose TRACK AUTOMATION: WRITE (TOUCH) or TRACK AUTOMATION: WRITE (LATCH) from the menu.
3. Select the parameter you want to edit:
   - For a track envelope, select the envelope tool and click the envelope point you want to edit. You can right-click a point and choose PROPERTIES from the shortcut menu to display an effect's property page.
   - For a keyframe, click the EXPAND/COLLAPSE TRACK KEYFRAMES button to expand track keyframe rows, and then double-click a keyframe to open its property page. For more information about using an effect, see Adding video effects
4. Adjust the control that corresponds to the envelope point or keyframe you want to adjust. The selected envelope point/keyframe is edited, and all others are unaffected.

   For track envelopes, you can also edit the envelope directly in the timeline. For more information, see Adjusting envelopes

Set the automation recording mode for a track

1. Select the AUTOMATION SETTINGS button ®.
2. Click the ▾ next to the AUTOMATION SETTINGS button and choose a command from the menu to choose the automation mode.

> **TIP** To set the automation mode for all tracks, press Ctrl+A before choosing a mode on any track.

Mode	Track Icon	Description
Off	⊘	Automated parameters are ignored during playback. When you switch to Off mode, the control setting from the cursor position is used as a static setting, and the envelope/keyframe is dimmed to indicate that it is unavailable.
Read	Ⓡ	The envelope/keyframe value is applied during playback, and the control reflects the envelope/keyframe settings at the cursor position. Adjustments to the control are not recorded.
Write (Touch)	Ⓡ	The envelope/keyframe value is applied during playback, and the control follows the envelope/keyframe settings during playback and when you position the cursor. Envelope points or keyframes are created only while a control is being adjusted. When you stop adjusting the control, automation recording stops and the existing envelope points/keyframes are unaffected.
Write (Latch)	Ⓡ	The envelope/keyframe value is applied during playback, and the control follows the envelope/keyframe settings during playback and when you position the cursor. Envelope points or keyframes are created when you change a control setting, and recording continues until you stop playback. When you stop adjusting the control, the control's last setting overwrites the existing envelope points/keyframes.

Using Scripting

You can use scripting to streamline repetitive tasks, integrate with external applications, and implement customized features.

From the Tools menu, choose SCRIPTING and choose a command from the submenu.

> **IMPORTANT** Scripts can pose a security risk to your computer. A script has the power to delete files, read files, write files, execute programs, access the Internet, access files on your network, and so on. Always examine the contents of a script before running it. If you don't understand the script, do not run it unless it comes from a trusted source. In general, take the same precautions you would take for any program you download from the Internet or receive in an e-mail attachment.

> **IMPORTANT**
> J# is not supported in .NET 4.0. If you need to use JScript scripts, please install the .NET 2.0/3.5 runtime libraries.
>
> To install, choose PROGRAMS AND FEATURES, choose TURN WINDOWS FEATURES ON OR OFF, and then select the .NET FRAMEWORK 3.5 (INCLUDES .NET 2.0 AND 3.0) check box.
>
> After installing .NET, please restart VEGAS Pro.

Running a script

1. From the Tools menu, choose SCRIPTING.
2. Choose a script from the submenu or choose RUN SCRIPT from the submenu to browse to the script file (.vb or .cs) you want to run.

Adding scripts to the Scripting menu

When you start the program, VEGAS Pro looks at the Script Menu folder in the VEGAS Pro program folder to determine which scripts appear in the Scripting submenu. This folder is `C:\Program Files\VEGAS\VEGAS Pro\23\Script Menu` by default.

1. Add or delete scripts in the Script Menu folder to change the contents of the submenu.

   > **TIP** To prevent duplication of script files, you can use shortcuts in the Script Menu folder.

2. From the Tools menu, choose Scripting, and then choose RESCAN SCRIPT MENU FOLDER to update the menu.

Using VEGAS Pro extensions

VEGAS Pro extensions are compiled scripts that are available under the Extensions submenu in the View, Edit, or Tools menus. These extensions are loaded when VEGAS Pro starts and remain loaded as long as the program is running. Extensions can respond to changes in project data, control playback, and display a non modal interface.

You can use the Customize Toolbar dialog to add VEGAS Pro extensions to the toolbar, or use the Customize Keyboard dialog to assign keyboard shortcuts to VEGAS Pro extensions.

For more information, see Customizing the toolbar and Customizing keyboard shortcuts

VEGAS Pro extensions are saved in `C:\Users\user name\AppData\Local\VEGAS\Application Extensions`.

Creating a script

VEGAS Pro scripting uses the Microsoft .NET framework for scripting. You can write scripts in C# or Visual Basic .NET.

Editing an existing script

All you need to edit a script is a simple text editor. The scripts that are included with VEGAS Pro are fully commented to help you find and edit the parameters you need.

1. Create a copy of the script (.vb or .cs) file you want to edit, assigning a descriptive name to the copy.
2. Open the new copy of the script in your text editor and edit the script as needed.

Creating custom button images for scripts

If you want to display custom icons for scripts in the Scripting menu and toolbars, you can add .png files to your Script Menu folder.

1. Create a 32-bit PNG file with the icon you want to use. Icons must be 16x16 pixels, and transparency is supported.
2. Save the PNG file in your Script Menu folder (typically `C:\Program Files\VEGAS\VEGAS Pro 23.0\Script Menu`) using the same name as the script the icon should represent.

   For example, to assign a custom icon to the HelloWorld.cs script, the icon should be saved as HelloWorld.cs.png.
3. Customize the toolbar as needed, and the custom icons will be displayed in the Scripting menu (and in any toolbars that include the script) toolbar the next time you start the application.

Using VEGAS Pro command-line options

You can use the following commands to start VEGAS Pro from the command line, open projects, start scripts, pass arguments to scripts, or start VEGAS Pro extensions.

NOLOGO

Starts VEGAS Pro without displaying the application splash screen.

> **EXAMPLE** `Vegas230.exe /NOLOGO`

OPEN

Starts VEGAS Pro and opens the specified media file or project.

> **EXAMPLE**
> `Vegas230.exe /OPEN "E:\Video\Wildflowers 001.avi"`
>
> —or—
>
> `Vegas230.exe /OPEN "E:\Vegas_Projects\24p widescreen.veg"`

RUNSCRIPT

Starts VEGAS Pro and runs the specified script.

> **EXAMPLE**
> `Vegas230.exe /RUNSCRIPT "C:\CustomScripts\ScriptName.cs"`
>
> —or—
>
> `Vegas230.exe /SCRIPT "C:\CustomScripts\ScriptName.cs"`

SCRIPTARGS

Starts VEGAS Pro and passes the specified arguments to a script.

> **EXAMPLE** `Vegas230.exe /SCRIPTARGS "<argument>" /SCRIPT "<script path>"`

> **NOTE** For more information about script arguments, please see the VEGAS Pro Scripting API.

CMDMODULE

Starts VEGAS Pro and loads the specified extension.

You can use this method to add VEGAS Pro extensions that are not saved in the extensions search path.

> **EXAMPLE** `Vegas230.exe /CMDMODULE "E:\Extensions\MyExtension.dll"`

OPENPRJ

Starts VEGAS Pro and opens the project file referenced in the specified media file.

EXAMPLE `Vegas230.exe /OPEN "E:\Video\Wildflowers 001.avi"`

NOTE This command will have no effect if the specified media file was not rendered with an embedded project path reference.

Preferences

General Tab 1181

Video Tab 1190

Preview Device Tab 1197

Audio Tab 1206

Audio Device Tab 1211

MIDI Tab 1222

VST Effects Tab 1223

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Display Tab 1231

CD Settings Tab 1236

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Deprecated Features 1255

Choose OPTIONS | PREFERENCES to display the Preferences window. Use the tabs in this window to customize the interface to suit your needs and working preferences.

Whether you want to use VEGAS Pro on another computer or if you have to reinstall the program after a hard disk crash, optimizing the Preferences for your personal needs takes some time and effort. So it is a good idea to backup your preferences regularly. To do so, export your preferences with menu OPTIONS | EXPORT PREFERENCES... and save all preferences to a file. Use IMPORT PREFERENCES... to import such a preferences file (*.vegprefs) back into a VEGAS Pro installation.

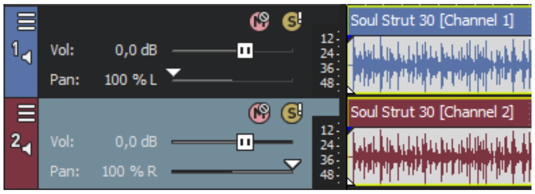
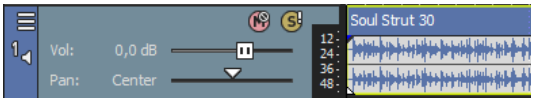
> **IMPORTANT** Importing preferences may require a restart of the program. Therefore, you better save your project before importing preferences.

General Tab

From the OPTIONS menu, choose PREFERENCES and select the General tab to specify miscellaneous options.

Item	Description
Automatically open last project on startup	When this checkbox is selected, last project you edited will be reopened if the project was still open when you exited VEGAS Pro.
Confirm media deletion when still in use	When this checkbox is selected, a message box will appear asking if you want to delete a media file that is currently in use by the project.
Save active prerenders on project close	When this checkbox is selected, prerendered video files are preserved when a project is closed.
Close media files when not the active application	When this checkbox is selected, files can be edited in external editors (audio, image, etc.) while they are contained in events on the VEGAS Pro timeline.
Close audio and MIDI ports when not the active application	Select this checkbox if you want to close audio and MIDI ports when you switch to another application.
Use Newsfeed to stay informed about VEGAS product updates	When this checkbox is selected, you will receive notification when updates are available. Clear the checkbox to bypass the Newsfeed dialog.

Item	Description
Prompt to adjust project settings to match first media added to timeline	Select this checkbox if you want VEGAS Pro to ask you whether you want to match your project video settings to match the first video media you add to the timeline. **NOTE** If you choose a VEGAS Pro project (.veg) file, VEGAS Pro will match the settings of the project, not the media within the project. When the checkbox is cleared, no prompt will be displayed. For more information, see Setting project properties
Check project file type associations at startup	When this checkbox is selected, VEGAS Pro will check whether VEGAS Pro files are associated with VEGAS Pro and will prompt you to restore the file association if necessary.
Enable joystick support	Select this checkbox if you want to use a joystick to control panning, color corrector wheels, and other controls. For more information, see Using a joystick for panning, adjusting controls, and color correction Clearing the checkbox can prevent problems with copy-protection dongles.
Allow pulldown removal when opening 24p DV	Select this checkbox if you want to remove pulldown when you open 24 fps progressive-scan DV video files. When the checkbox is cleared, 24p video is read as 29.97 fps interlaced video (60i).
AAF Export - Use frame unit for audio	This enables the use of frame units instead of time units for audio when exporting to AAF format.

Item	Description
AAF Export - Use clip-based audio envelope	When this option is selected, audio volume changes (envelopes) that have been applied directly to clips in the Vegas Pro timeline will be included in the AAF file when exporting. This ensures that audio level adjustments carry over to other systems that support AAF, maintaining the audio dynamics set in VEGAS Pro.
Import stereo as dual mono	When this checkbox is selected, two-channel audio files will be opened as separate mono audio events on separate tracks:  1 Vol: 0,0 dB Pan: 100 % L Soul Strut 30 [Channel 1] 2 Vol: 0,0 dB Pan: 100 % R Soul Strut 30 [Channel 2] 12 24 36 48 The audio events are grouped, and tracks that are created by adding media will be panned hard left and hard right. You can select an event and choose EDIT | CHANNELS to choose which channel is used for that event. You can use this feature when working with two-channel source media that contains two distinct audio channels, such as an interview in which channel 1 contains the interviewer's voice and channel 2 contains the subject's voice. When the checkbox is cleared, two-channel audio files will be opened as a stereo pair on a single track:  1 Vol: 0,0 dB Pan: Center Soul Strut 30 12 24 36 48 For more information, see Audio channels
Use GPU processing for ACES color management	This allows VEGAS Pro to use the computer's GPU to process ACES (Academy Color Encoding System) color management tasks.

Item	Description
Prompt to keep files after recording	When this checkbox is selected, the Recorded Files dialog box will appear after every recording session allowing you to rename, delete, or keep the .wav file.
Create undos for FX parameter changes	When this checkbox is selected, undos are created for all changes made to effect parameters.
Keep bypassed FX running	Select this checkbox if you want effects to remain open so you can bypass/enable effects with no pause for A/B testing. When the checkbox is cleared, effects are fully bypassed, conserving processing power.
Automatically name regions and markers if not playing	When this checkbox is selected, an edit box is displayed so you can name markers and regions as you place them.
Use linear scrub range	When this checkbox is selected, the scrub control uses a linear range. When the checkbox is cleared, the playback rate increases or decreases more as you drag toward the ends of the scrub control. ℹ For more information, see Scrubbing
Allow Ctrl+drag cursor style scrub over events	When this checkbox is selected, you can scrub with the mouse even when the cursor is over an event.

Item	Description
Always draw marker lines	Select this checkbox if you want to extend marker and region lines across tracks in the VEGAS Pro timeline. When the checkbox is cleared, marker lines are drawn only when Enable Snapping is turned on. For more information, see Enable snapping
Allow edit cursor to be dragged	Select this checkbox if you want to be able to drag the cursor to change its position on the timeline and in the Trimmer window. When this checkbox is selected, you can position the cursor without losing your loop region To create a time selection without moving the cursor, hold the Shift key.
Double-click on media file loads into Trimmer instead of tracks	When checked, double-clicking a media file will open the file in the Trimmer window instead of adding the file to a track.
Show Trimmer history with filename first, then folder	When this checkbox is selected, the Trimmer history drop-down list displays the media file's name first, followed by the folder it is in. Select this to reverse the names.
Automatically save Trimmer markers and regions with media file	When this checkbox is selected, markers and regions created at the media file level in the Trimmer will be saved to the file.

Item	Description
Provide a warning if a track being deleted holds at least one event	Unselect this checkbox when you don't want to be warned when you delete a track that contains events.
Warn if creating a nested timeline may adversely affect the project	This option will give a warning if creating a nested timeline could potentially have negative consequences for the project.
Warn to save modified nested timeline prior to opening parent timeline	You'll receive a warning to save any modifications made to a media timeline before opening the parent timeline.
Always show Welcome Screen when program starts	When checked, the Welcome Screen will always be displayed upon starting VEGAS Pro.
Automatically thin envelopes after drawing	Enables the automatic thinning of envelopes after they are drawn to reduce the number of points and smooth out the envelope curve.
Enable autosave	If selected, VEGAS Pro will automatically save your project at regular intervals.
Double-click event edge to toggle Expanded Edit Mode	Allows you to enter the Expanded Edit Mode by double-clicking the edge of an event.

Item	Description
Enable Automatic FX Window Resizing	When enabled, the FX window will resize automatically based on the number of effects.
Do not create .sfk files to store peak data	With this preference active, VEGAS Pro still creates the .sfk data so that it can show the audio waveform and display proper metering. However, this .sfk data is stored in temporary memory instead of in a permanent .sfk file. This only affects .sfk data that you create when you add a new audio file to the project. If any .sfk files already exist from earlier, VEGAS Pro still uses those files. If you delete those old .sfk files, VEGAS Pro will rebuild them when you add the files again or return to your project, but now this information will also be held in temporary memory. Since the .sfk data is temporary, it is lost as soon as you close the project. This means that when you reopen the project, VEGAS Pro will need time to rebuild the .sfk data before it can show the waveforms and so on.
Hide new .sfk files	The preference flags newly created SFK files as Hidden so that they honor your Window Hidden Files settings. Change your Windows settings to show hidden files, and you will now see the .sfk file along with the original audio file. This preference only affects .sfk files that are created after you set it. .sfk files created previously do not contain the hide flag and thus do not react to this preference. If you want those .sfk files to also respect the hide flag, delete the existing .sfk files. Then return to your VEGAS Pro project. Since VEGAS Pro will no longer find those deleted .sfk files, it creates new ones for any audio in your project. Those new .sfk files now contain the hide flag and will be hidden according to your Windows settings.
Send analysis data to MAGIX	If this is checked, VEGAS Pro will send analysis data to MAGIX for product improvement purposes.

Item	Description
Recently used project list	Select the checkbox and enter a number in the edit box if you want to list your most recently used projects at the bottom of the File menu.
Temporary files folder	Displays the folder where temporary files are created. Click the BROWSE button to specify a new folder. **NOTE** When you add a media file from a removable device, a copy of the media file is stored in a subfolder within this folder. This keeps the media file available for use even if the source of the media is no longer accessible. Be aware that these subfolders are cleared when you close the VEGAS Pro application. However, they are not cleared if the application closes inappropriately.
Free storage space in selected folder	Displays the amount of space available in the folder specified in the TEMPORARY FILES FOLDER box.
Default All	Restores the General page options to the default settings.

Video Tab

From the Options menu, choose PREFERENCES and select the Video tab to specify video settings and to adjust the preview settings for the Video Preview window.

ℹ For more information, see Using the Video Preview window

Item	Description
Dynamic RAM preview max	Enter a value to set the amount of RAM that you want to dedicate to video previews. For more information, see Using dynamic RAM previews **IMPORTANT** The maximum size of the RAM cache is displayed to the right of the control. If you reserve excessive amounts of RAM for your RAM cache, performance may decrease.
Maximum number of rendering threads	This setting specifies the maximum number of threads that will be used for rendering files. Increasing the setting will not increase performance beyond the number of available threads; for example, if you have a single-processor computer, choosing 2 will not improve rendering performance. Decrease the setting if you have a multiprocessor (or multicore) computer and want to limit processor use or turn off multithreaded rendering. For example, if you had a dual-processor hyperthreaded computer, choosing 3 would allow you to keep one thread available for other tasks while rendering.

Item	Description
GPU acceleration of video processing	Many built-in video processing functions and video plug-ins in VEGAS Pro support GPU acceleration. To enable GPU-accelerated video processing, choose a device from the GPU ACCELERATION OF VIDEO PROCESSING drop-down list. Choose OFF to turn off this feature. **NOTE** - Only compatible devices are displayed in this list. - In a system with multiple GPU's, VEGAS indicates which GPU is optimally configured to get best performance and by default, selects the optimal GPU device for accelerated video processing. - The GPU Accelerated folder in the Transitions, Video FX, Media Generators, and Compositors windows allow you to easily identify your GPU-accelerated plug-ins.
Show source frame numbers on event thumbnails as	Determines how individual frame information, located in a box at the lower left-hand corner of each frame, will be displayed. The frame information box can include FRAME NUMBERS, TIME, or TIMECODE.

Item	Description
Thumbnails to show in video events	Choose a setting from the drop-down list to choose which thumbnails you want to draw in video events. ● NONE: No video frames are displayed. ● HEAD: Only the first frame is displayed. ● HEAD, TAIL: The first and last frame are displayed. ● HEAD, CENTER, TAIL: The first, middle, and last frames are displayed. ● ALL: All frames are displayed. **TIP** If you want to toggle audio waveforms in events, choose VIEW | AUDIO EVENT WAVEFORMS.
Automatically create video proxies for greater than 4k resolution media	When using 4k media and above proxies are created automatically. You can disable this here, when you have a real fast machine.
Action safe area (%)	Specify a percentage for the border size in the video's safe area. Video within this safe area will always be visible on a television monitor. The safe action borders are displayed in the Video Preview window as a grid via clicking on the OVERLAYS button ▦ .

Item	Description
Title safe area (%)	Specify a percentage for the border size in the video's safe title area. Video within this safe area will always be visible on a television monitor. The safe title borders are displayed in the Video Preview window as a grid via clicking on the OVERLAYS button ▦ .
Horizontal grid divisions (#) Vertical grid divisions (#)	Specifies the settings for the grid in the Video Preview window. The grid is used to help you line up overlays, pan and scan, and video motion.
Display at project size	Displays the Video Preview window at the size specified on the Video tab of the Project Properties dialog.
Simulate device aspect ratio	Displays square pixels in the Video Preview window even if the PIXEL ASPECT RATIO setting in the Project Properties dialog is using nonsquare pixels (DV). This switch will turn on/off square/non-square interpolation, allowing faster playback and viewing flexibility when drawing video frames to the VEGAS Pro Video Preview window. **TIP** When you are performing pixel-critical editing (such as chroma keying or precise track motion/cropping), leave this preference turned off. Turning on square-pixel interpolation will scale the image and can potentially hide some detail when it combines pixels.
Background color	Determines the color of the Video Preview window's background.

Item	Description
Display take names	Select this checkbox if you want to display take names in the Video Preview window when editing multicamera video. For more information, see Editing multicamera video
Display take numbers	Select this checkbox if you want to display take numbers in the Video Preview window when editing multicamera video.
Active take indicator	Click to display a color picker you can use to choose the color that will be used to indicate the current take when editing multicamera video. Click the button to switch between RGB and HSL color modes, or click the eyedropper to sample a color from your screen.

Item	Description
Track fade top	Determines the color of the fade-to-color envelope when the envelope is dragged toward the top of the track. Click the color swatch to display a color picker, where you can choose any color using the RGBA or HSLA controls. Click the button to switch between RGB and HSL color modes, or click the eyedropper to sample a color from your screen. For more information, see Video track automation **TIP** You can set the track fade colors for each video track independently by right-clicking the track header, choosing FADE COLORS, and then choosing TOP or BOTTOM from the submenu.
Track fade bottom	Determines the color of the fade-to-color envelope when the envelope is dragged toward the bottom of the track. Click the color swatch to display a color picker, where you can choose any color using the RGBA or HSLA controls. Click the button to switch between RGB and HSL color modes, or click the eyedropper to sample a color from your screen.
Default All	Restores the Video page options to the default settings.

Preview Device Tab

From the Options menu, choose PREFERENCES and then click the Preview Device tab to configure an external monitor. Your video will be sent to this device when you click the PREVIEW ON EXTERNAL MONITOR button in the Video Preview window.

TIP

- If your project contains complex effects or compositing and you cannot attain full-frame-rate playback, use selective prerendering to prerender the sections of your project that cannot be rendered in real time. For more information, see Selectively prerender video
- If your video preview device supports audio playback (please see the DETAILS box on the Preview Device tab for device status), you can play your project audio through your video preview device.

  First, configure your video preview device. Next, click the Audio Device tab and choose MICROSOFT SOUND MAPPER from the AUDIO DEVICE TYPE drop-down list and select the USE AUDIO-CAPABLE PREVIEW DEVICE check box. For more information, see Audio Device Tab

AJA devices

1. From the Options menu, choose PREFERENCES and then click the Preview Device tab.
2. From the DEVICE drop-down list, choose AJA VIDEO DEVICE. The Details box displays information about the device.
3. Use the CONFORM OUTPUT TO THE FOLLOWING FORMAT controls to adjust the video to display properly on your external monitor.
   a. Choose the desired format from the CONFORM OUTPUT TO THE FOLLOWING FORMAT drop-down list.

b. Select a radio button to indicate when you want to adjust the output to the selected format.

Setting	Description
Only when the project does not match any available format	Select this radio button if you want to adjust the video only if the project settings do not match a standard format. For more information, see [Setting project properties]()
Always	Select this radio button if you want to adjust the video output to the selected format whenever you preview on the external monitor. Use this setting when you do not have a preview device that supports your required project format. For example, if you're creating a PAL project, but you don't have a PAL monitor, you could use this setting to preview on an NTSC monitor.

4. Select the USE PROGRESSIVE SEGMENTED FRAME (PSF) VIDEO FORMATS checkbox if your project properties are set to a progressive-scan format and you want to preview on a device that stores and transfers progressive-scan frames by dividing fields.
5. Select the USE 10-BIT ENCODING checkbox if you're using 10-bit source material and the PIXEL FORMAT setting on the Video tab of the Project Properties tab is set to 32-BIT FLOATING POINT.

   Enabling 10-bit encoding allows your preview to maintain higher color resolution when previewing video.

   When the checkbox is not selected, the video preview output will use 8-bit encoding.
6. If audio and video do not play back in synchronization, use the SYNC OFFSET control to specify a frame offset to restore synchronization.

> **NOTE** This setting affects preview synchronization only. Audio and video synchronization in your project is unaffected. Depending on your hardware setup, you may need to adjust your settings. For example, you might need one setting when previewing directly to a monitor and a slightly higher setting when previewing through a monitor that is connected to a deck.

7. Choose a setting from the GENLOCK drop-down list if you want to synchronize your video output with a reference signal.

Setting	Description
Video In	Synchronizes to the SDI input.
Ref In	Synchronizes to an external reference input signal.
Free Run	Ignores all input signals and uses internal timing.

8. Select the RECOMPRESS EDITED FRAMES checkbox if you want to recompress edited frames in your project before previewing.

   When the checkbox is cleared, edited frames will not be passed to your preview device.

9. Select the DISPLAY FRAMES IN VIDEO PREVIEW WINDOW DURING PLAYBACK checkbox if you want to preview on the external monitor and in the VEGAS Pro Video Preview window simultaneously.

   When the checkbox is cleared, video is sent only to the external monitor.

10. Select the USE PROJECT OUTPUT ROTATION SETTING checkbox if you're rendering a rotated project and want to use the OUTPUT ROTATION setting from the Project Properties dialog for previewing your project.

    When the checkbox is cleared, the media is rotated according to its Media Properties setting, but the Video Preview output is unrotated—you can use this setting to proof your project on an unrotated display.

    For more information, see [Creating rotated projects]()

Blackmagic Design DeckLink devices

1. From the Options menu, choose PREFERENCES and then click the Preview Device tab.
2. From the DEVICE drop-down list, choose BLACKMAGIC DESIGN DECKLINK VIDEO DEVICE. The Details box displays information about the device.
3. Use the CONFORM OUTPUT TO THE FOLLOWING FORMAT controls to adjust the video to display properly on your external monitor.
    a. Choose the desired format from the CONFORM OUTPUT TO THE FOLLOWING FORMAT drop-down list.
    b. Select a radio button to indicate when you want to adjust the output to the selected format.

Setting	Description
Only when the project does not match any available format	Select this radio button if you want to adjust the video only if the project settings do not match a standard format. For more information, see Setting project properties
Always	Select this radio button if you want to adjust the video output to the selected format whenever you preview on the external monitor. Use this setting when you do not have a preview device that supports your required project format. For example, if you're creating a PAL project, but you don't have a PAL monitor, you could use this setting to preview on an NTSC monitor.

4. Select the USE 10-BIT ENCODING checkbox if you're using 10-bit source material and the PIXEL FORMAT setting on the Video tab of the Project Properties tab is set to 32-BIT FLOATING POINT.

   Enabling 10-bit encoding allows your preview to maintain higher color resolution when previewing video.

   When the checkbox is not selected, the video preview output will use 8-bit encoding.

5. If audio and video do not play back in synchronization, drag the SYNC OFFSET slider to specify a frame offset to restore synchronization.

   > **NOTE** This setting affects preview synchronization only. Audio and video synchronization in your project is unaffected. Depending on your hardware setup, you may need to adjust your settings. For example, you might need one setting when previewing directly to a monitor and a slightly higher setting when previewing through a monitor that is connected to a deck.

6. Select the RECOMPRESS EDITED FRAMES checkbox if you want to recompress edited frames in your project before previewing. When the checkbox is cleared, edited frames will not be passed to your preview device.

7. Select the DISPLAY FRAMES IN VIDEO PREVIEW WINDOW DURING PLAYBACK checkbox if you want to preview on the external monitor and in the VEGAS Pro Video Preview window simultaneously.

   When the checkbox is cleared, video is sent only to the external monitor.

8. Select the USE PROJECT OUTPUT ROTATION SETTING checkbox if you're rendering a rotated project and want to use the OUTPUT ROTATION setting from the Project Properties dialog for previewing your project.

   When the checkbox is cleared, the media is rotated according to its Media Properties setting, but the Video Preview output is unrotated—you can use this setting to proof your project on an unrotated display.

   For more information, see Creating rotated projects

OHCI-compliant IEEE 1394/DV

1. From the Options menu, choose PREFERENCES and then click the Preview Device tab.
2. From the DEVICE drop-down list, choose OHCI COMPLIANT IEEE 1394. The Details box displays information about the device.
3. Use the CONFORM OUTPUT TO THE FOLLOWING FORMAT controls to adjust the video to display properly on your external monitor.
    a. Choose the desired format from the CONFORM OUTPUT TO THE FOLLOWING FORMAT drop-down list.
    b. Select a radio button to indicate when you want to adjust the output to the selected format.

Setting	Description
Only when the project does not match any available format	Select this radio button if you want to adjust the video only if the project settings do not match a standard format. For more information, see Setting project properties
Always	Select this radio button if you want to adjust the video output to the selected format whenever you preview on the external monitor. Use this setting when you do not have a preview device that supports your required project format. For example, if you're creating a PAL project, but you don't have a PAL monitor, you could use this setting to preview on an NTSC monitor.

4. If audio and video do not play back in synchronization, drag the SYNC OFFSET slider to specify a frame offset to restore synchronization.

   > **NOTE** This setting affects preview synchronization only. Audio and video synchronization in your project is unaffected. Depending on your hardware setup, you may need to adjust your settings. For example, you might need one setting when previewing directly to a monitor and a slightly higher setting when previewing through a monitor that is connected to a deck.

5. Select the RECOMPRESS EDITED FRAMES checkbox if you want to recompress edited frames in your project before previewing. When the checkbox is cleared, edited frames will not be passed to your preview device.

   If you're previewing a project that consists of DV media with no compositing or transitions, the DV will be passed directly to your preview device. If, however you'd added a 6-frame crossfade, the crossfade would be passed to the preview device only if the checkbox is selected.

6. Select the DISPLAY FRAMES IN VIDEO PREVIEW WINDOW DURING PLAYBACK checkbox if you want to preview on the external monitor and in the VEGAS Pro Video Preview window simultaneously.

   When the checkbox is cleared, video is sent only to the external monitor.

7. Select the USE PROJECT OUTPUT ROTATION SETTING checkbox if you're rendering a rotated project and want to use the OUTPUT ROTATION setting from the Project Properties dialog for previewing your project.

   When the checkbox is cleared, the media is rotated according to its Media Properties setting, but the Video Preview output is unrotated—you can use this setting to proof your project on an unrotated display.

   For more information, see Creating rotated projects

Windows Graphics Card

> **TIP** You can also use the Windows Graphics Card device on a computer with a single monitor. When you enable the external monitor, the video preview will fill your screen.

1. From the Options menu, choose PREFERENCES and then click the Preview Device tab.
2. From the DEVICE drop-down list, choose WINDOWS GRAPHICS CARD. The Details box displays information about the device.
3. From the DISPLAY ADAPTER drop-down list, choose the device where your preview monitor is connected.

   You can click the IDENTIFY DISPLAYS button to determine which display corresponds to each setting in the drop-down list. A number will be displayed on each monitor.

   > **NOTE** If the monitor number is displayed in red, the graphics card does not support 3D acceleration or acceleration has been turned off. You can go to Start | Settings | Control Panel | Display | Settings | Advanced | Troubleshoot to turn on acceleration if your adapter supports it.

4. Select the SCALE OUTPUT TO FIT DISPLAY checkbox if you want the video preview to fill the display.
5. Select the APPLY DEINTERLACE FILTER checkbox if you're previewing interlaced video on a noninterlaced display. This filter can reduce the artifacts you often see on the edges of moving areas.

   > **IMPORTANT** The APPLY DEINTERLACE FILTER checkbox will be unavailable if your video adapter does not support pixel shading.

6. If you want to adjust color reproduction for video previews, select the ADJUST LEVELS FROM STUDIO RGB TO COMPUTER RGB check box.

   If your source media conforms to studio RGB color (black=16 and white=235) and you will be previewing on your computer's CRT or LCD monitor, this setting expands the studio RGB range to 0 to 255 to conform to a computer display.

7. Select the WAIT FOR VERTICAL SYNC checkbox if you want to wait for the monitor's vertical refresh timing before displaying frames. This setting can be used to correct image tearing.
8. Select the OPTIMIZE GPU DISPLAY PERFORMANCE checkbox for most situations. You can clear the checkbox if you experience system, external monitor, or video preview performance problems.

9. Select the RECOMPRESS EDITED FRAMES checkbox if you want to recompress edited frames in your project before previewing. When the checkbox is cleared, edited frames will not be passed to your preview device.
10. Select the DISPLAY FRAMES IN VIDEO PREVIEW WINDOW DURING PLAYBACK checkbox if you want to preview on the secondary monitor and in the VEGAS Pro Video Preview window simultaneously.

    When the checkbox is cleared, video is sent only to the secondary monitor.
11. Select the USE PROJECT OUTPUT ROTATION SETTING checkbox if you're rendering a rotated project and want to use the OUTPUT ROTATION setting from the Project Properties dialog for previewing your project.

    When the checkbox is cleared, the media is rotated according to its Media Properties setting, but the Video Preview output is unrotated—you can use this setting to proof your project on an unrotated display.

    For more information, see Creating rotated projects

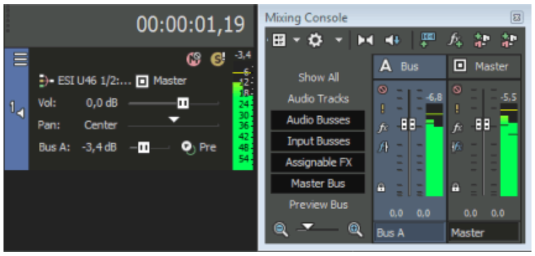
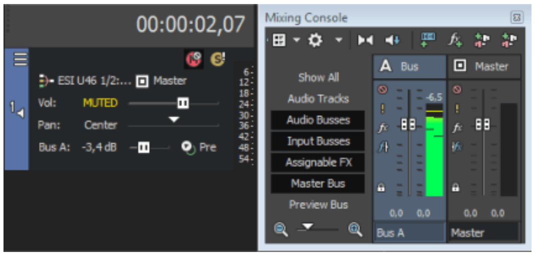
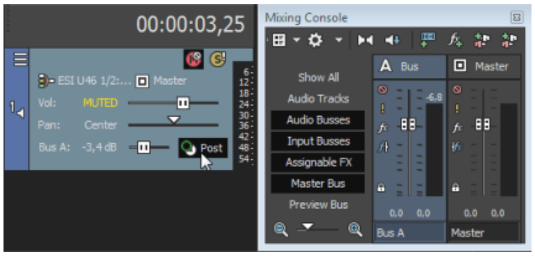
Audio Tab

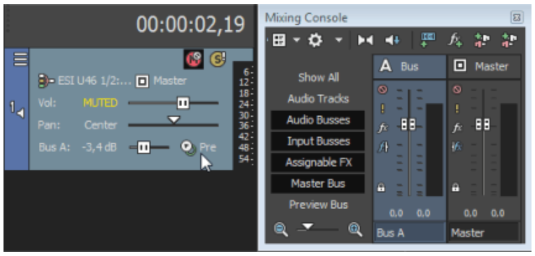
Use the Audio tab to specify playback and recording options.

How to open this tab:

In the main menu, click OPTIONS | PREFERENCES | AUDIO tab.

Item	Description
Waveform display while recording	Choose a setting from the drop-down list to specify how to display audio waveforms while recording: - DON'T SHOW WAVEFORMS: No waveforms will be displayed on any tracks until the recording process has been completed. - SHOW WAVEFORMS FOR A SINGLE TRACK: Selecting this option will display waveforms only when a single track is armed. If you arm multiple tracks, waveforms will not show. - SHOW ALL WAVEFORMS: If you are arming multiple tracks for record, all tracks will display the waveform during recording.
Normalize peak level (dB)	Use the slider to change the default Peak Level settings. This value will be used when you use the NORMALIZE event switch. For more information, see Applying switches to events
Import audio at project tempo	When this checkbox is selected, ACID loops are automatically stretched to match the project tempo (specified on the Ruler tab of the Project Properties dialog) when you add them to the timeline or preview from the Explorer window. When the checkbox is cleared, tempo information is ignored.
Record to Broadcast Wave Format	When this checkbox is selected, VEGAS Pro records Broadcast Wave Format (.bwf) metadata when recording .wav files. You can view this information on the General tab of the Properties dialog for an event. For more information, see Editing event properties Included in the .bwf metadata is a TIME REFERENCE value. This item tracks where on the timeline the file was recorded. When you import a recorded .bwf file, it is added to the timeline at the same location it was originally recorded. The originator (VEGAS Pro) and originator reference (a unique ID number), are also recorded.

Item	Description
Track pre-fader sends listen to mute	Select this checkbox if you want pre-volume sends from tracks to busses and assignable effects to respond to the track mute state. When the checkbox is cleared, the pre-volume sends are not affected by the mute state (in order to facilitate cue mixes). For example, assume you have a project with one track and Bus A that is routed to a hardware output. By default, the bus send is pre volume, so the Master and Bus A will have the same output when you play your project:  00:00:01,19 ESI U46 1/2:... Master Vol: 0,0 dB Pan: Center Bus A: -3,4 dB Pre Mixing Console Show All Audio Tracks Audio Busses Input Busses Assignable FX Master Bus Preview Bus A Bus Master Bus A Master If you mute the track, the track's output to the Master bus is muted, but the prefader send to Bus A continues playing (if the TRACK PREFADER SENDS LISTEN TO MUTE checkbox is not selected):  00:00:02,07 ESI U46 1/2:... Master Vol: MUTED Pan: Center Bus A: -3,4 dB Pre Mixing Console Show All Audio Tracks Audio Busses Input Busses Assignable FX Master Bus Preview Bus A Bus Master Bus A Master If you switch the track send to post volume, the track's outputs to the Master bus and Bus A are muted:  00:00:03,25 ESI U46 1/2:... Master Vol: MUTED Pan: Center Bus A: -3,4 dB Post Mixing Console Show All Audio Tracks Audio Busses Input Busses Assignable FX Master Bus Preview Bus A Bus Master Bus A Master

Item	Description
	If you select the TRACK PREFADER SENDS LISTEN TO MUTE checkbox and switch the track send back to pre volume, the track's outputs to the Master bus and Bus A are muted:  Vol: MUTED Pan: Center Bus A: -3,4 dB 00:00:02,19 ESI U46 1/2:... Master Pre Mixing Console Show All Audio Tracks Audio Busses Input Busses Assignable FX Master Bus Preview Bus A Bus Master 0.0 0.0 0.0 0.0 Bus A Master
Use legacy track send gain	Select this checkbox if you want to configure audio track sends to behave as they did in VEGAS Pro 7.0 and earlier. When the checkbox is selected, you can open projects created with earlier versions of VEGAS Pro and be assured they will sound the same as they did in earlier versions of VEGAS Pro.
Enable support for 32-bit VST plug-ins	The 32-bit VST Bridge enables you to use 32-bit VST plug-ins in the 64-bit VEGAS Pro environment.
Preferred audio editor	Use this option to specify the location of the audio-editing application you want to use with your VEGAS Pro projects. This editor will be displayed in the Tools menu when you want to open an event in a sound editor. If Sound Forge software is detected on your system, it automatically becomes the default editor. To specify an audio editor, click the BROWSE button and browse for the editor’s .exe file. For more information, see Opening events in an audio editor

Item	Description
Metronome	Select the USE DEFAULT METRONOME SOUNDS radio button to use the default normal and accent sounds when using the metronome, or click USE CUSTOM METRONOME SOUNDS and specify the files you want to use in the NORMAL and ACCENT boxes. ● NORMAL: Specifies the sound file for the metronome when the USE CUSTOM METRONOME SOUNDS radio button is selected. ● ACCENT: Specifies the accent sound file for the metronome when the USE CUSTOM METRONOME SOUNDS radio button is selected. For more information, see Using the metronome
Open editor when new loudness log is generated	Select this checkbox of you want to automatically open loudness log files in your default text editor when you choose TOOLS | GENERATE LOUDNESS LOG. For more information, see Loudness metering and logging
Default All	Click the DEFAULT ALL button to restore all Audio preferences to the default settings.

Audio Device Tab

Use the Audio Device tab to specify playback and recording options. To display this tab, choose PREFERENCES from the Options menu, then click the Audio Device tab. Click the ADVANCED button to access the advanced audio preferences.

Item	Description
Audio device type	Choose a driver type from the drop-down list. - ASIO: Allows you to choose a specific low-latency ASIO device from the DEFAULT STEREO AND FRONT PLAYBACK DEVICE drop-down list. - Direct Sound Surround Mapper: When you're working with a 5.1 surround project and a surround-capable sound card, this setting uses the default Windows audio device to send 5.1-surround audio to your sound card. - Microsoft Sound Mapper: Uses the default Windows audio device for playback and recording. If your video preview device supports audio playback (please see the DETAILS box on the Preview Device tab for device status), you can play your project audio through your video preview device using the Microsoft Sound Mapper: 1. Configure your video preview device on the Preview Device tab in the Preferences dialog. 2. Select the Audio Device tab in the Preferences dialog and choose MICROSOFT SOUND MAPPER from the AUDIO DEVICE TYPE drop-down list. 3. Select the USE AUDIO-CAPABLE PREVIEW DEVICE check box. When you preview your project with VIDEO PREVIEW ON EXTERNAL MONITOR enabled, audio will be routed through your video preview device. When VIDEO PREVIEW ON EXTERNAL MONITOR is not enabled, audio will play through your

Item	Description
	default audio device. - WINDOWS CLASSIC WAVE DRIVER: Allows you to choose a specific audio device from the DEFAULT STEREO AND FRONT PLAYBACK DEVICEdrop-down list. Click the ADVANCED button to change settings for the selected device.
Default stereo and front playback device	Choose the device that you want to use for playing stereo sound data and the front-left and -right channels of a 5.1 surround project. Selecting the Microsoft Sound Mapper allows the operating system to select an appropriate device to use for the current sound data. **NOTE** If you have selected MICROSOFT SOUND MAPPER, you will not be able to assign busses to different devices. For more information, see Routing busses
Default rear playback device	Choose the device that you want to use for playing the rear channels of a 5.1 surround project.
Default center and LFE playback device	Choose the device that you want to use for playing the center and low-frequency effect channels of a 5.1 surround project.

Item	Description
Playback buffering (seconds)	Drag the slider to adjust the amount of buffering that occurs before starting playback. The larger the number, the more buffering occurs during playback. This value must be as low as possible without gapping. To set it, start at .25 and play back a typical song. Move some of the track faders. If the playback gaps at all, try increasing this slider in small increments until the gapping goes away. If you simply cannot get playback to be free of gapping, you need to either decrease the number of tracks you are trying to play simultaneously, install more RAM in your computer so you can increase buffering, buy a faster access hard drive, or minimize the number of DirectX plug-ins you are trying to use simultaneously.
Enable track buffering	Select this checkbox and drag the TRACK BUFFERING slider if you want to adjust the amount of audio that is prerendered ahead of the cursor position. When the checkbox is selected, a separate processing thread is used to render audio from tracks. On multiprocessor or multicore computers, a thread will be created for each logical processor, resulting in improved track counts, improved performance with lower latency, and faster audio rendering. When the checkbox is cleared, a single processing thread is used to render audio from tracks and busses.
Default audio recording device	Choose the device that you want to use for recording sound data. Selecting the MICROSOFT SOUND MAPPER allows the operating system to select an appropriate device to use for the current sound data.

Item	Description
Automatically detect and offset for hardware recording latency	Select the checkbox to automatically compensate for offset between the time you initiate recording and when your sound card starts recording. Clear the checkbox and drag the USER OFFSET slider to specify an offset value (hold `Ctrl` while dragging for fine adjustment).
Advanced	Clicking this button opens the Advanced Audio Preferences dialog. For more information, see Advanced Audio Configuration
Default All	Click on the DEFAULT ALL button to restore all Audio preferences to the default settings.

Advanced Audio Configuration

Use the Advanced Audio Configuration dialog to view information about and adjust settings for audio device selected in the AUDIO DEVICE TYPE drop-down list on the Audio Device tab of the Preferences dialog.

Microsoft Sound Mapper or Windows Classic Wave Driver

Item	Description
Audio devices	This list contains all of the audio devices that are installed in your computer. Select a device from the list to set the options below for that device.
Interpolate position	When checkbox is selected, the application will attempt to compensate for inaccurate devices by interpolating the playback or recording position. If you notice that your playback cursor is offset from what you are hearing, enable this option for the playback device.
Position bias	If the position of playback or record does not match what you hear after you enable INTERPOLATE POSITION, you can attempt to compensate using the POSITION BIAS slider. Moving this slider will offset the position forward or backward to compensate for the inaccuracies of the device.
Do not pre-roll buffers before starting playback	When this checkbox is selected, buffers will not be created prior to starting playback. Some devices do not behave properly if this checkbox is cleared. If your audio stutters when you start playback try checking this option.
Audio buffers	Drag the slider to set the number of audio buffers that will be used. Adjusting this setting can decrease gapping or help you synchronize the input and output for record input monitoring.
Buffer size	Choose a setting from the drop-down list to indicate the buffer size you want to use. Choose MME to use the PLAYBACK BUFFERING setting on the Audio Device tab in the Preferences dialog. For example, if you choose MME from the BUFFER SIZE drop-down, set the AUDIO BUFFERS slider to 5, and set PLAYBACK BUFFERING to 0.35 seconds, five 0.07-second buffers will be created. If you choose 1024 from the BUFFER SIZE drop-down and set the AUDIO BUFFERS slider to 5, five 1024-byte buffers will be created.

Item	Description
Priority	Choose a setting from the drop-down list to set the priority that is assigned to your audio buffers. Increasing the buffers' priority can help you attain smoother playback, but it can also adversely affect other processes.
Enable input monitoring	Select this checkbox if you want to be able to perform record input monitoring using a wave driver. When the checkbox is cleared, record input monitoring is not available. This setting has no effect on standard audio playback.

ASIO

When an ASIO driver is selected, the Advanced Audio Configuration dialog displays information about the settings for the selected driver. Click the CONFIGURE button to open the driver manufacturer's configuration applet and adjust settings.

The lower portion of the dialog lists the device name and the name for each of the selected ASIO device's ports. You can use these controls to customize input and output port names. For more information, see Customizing ASIO port naming

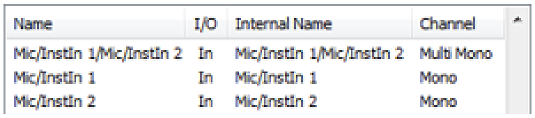
Customizing ASIO port naming

When you use an ASIO sound card, default names are displayed in VEGAS Pro for each of the device's ports. If you have a simple setup, the default names probably work well enough for you. However, if you have a complex setup, customizing the port names can help you keep track of your routing with meaningful labels.

For example, if you have your control room monitors connected to outputs 1 and 2 on your sound card, you could replace the default MAINOUT 1L and MAINOUT 1R port names with CTRLRM LEFT and CTRLRM RIGHT. If your lead vocal microphone is connected to MIC/INST 1, you could name the port LEADVOCAL, and a harmony microphone connected to MIC/INST 1 could be labeled HARMONY.

1. From the Options menu, choose PREFERENCES, and then click the Audio Device tab.
2. Choose your ASIO audio interface from the AUDIO DEVICE TYPE drop-down list, and then click APPLY.
3. Click the ADVANCED button to display the Advanced Audio Configuration dialog.
4. If you want to edit the name of an input or output port, click the label in the NAME column, and then press F2. You can then type a new name in the edit box.

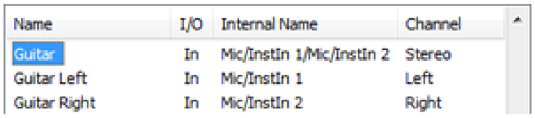
Item	Description
Name	The name of the port as it will be displayed in VEGAS Pro.



Name	I/O	Internal Name	Channel
Mic/InstIn 1/Mic/InstIn 2	In	Mic/InstIn 1/Mic/InstIn 2	Multi Mono
Mic/InstIn 1	In	Mic/InstIn 1	Mono
Mic/InstIn 2	In	Mic/InstIn 2	Mono

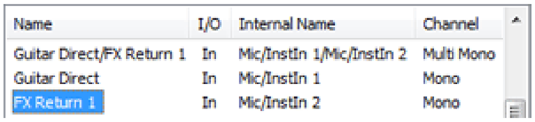
Input pairs and outputs can be mono, multiple mono, or stereo.

- Mono : A single-channel input or output.
- Stereo : A pair of two mono inputs or outputs. For example, you might connect the right and left outputs of a stereo device to a stereo input.
- Multi mono: A grouping of two monaural channels as a multichannel port. The content in the channels is from distinct monaural sources and not intended to be mixed as a stereo signal. For example, you might connect two microphones to separate inputs to record harmony vocals.



Name	I/O	Internal Name	Channel
Guitar	In	Mic/InstIn 1/Mic/InstIn 2	Stereo
Guitar Left	In	Mic/InstIn 1	Left
Guitar Right	In	Mic/InstIn 2	Right

After renaming the multiple mono port MIC/INSTIN 1/MIC INSTIN 2 to GUITAR, the port is switched to stereo, and the left and right channels are renamed GUITAR LEFT and GUITAR RIGHT.



Name	I/O	Internal Name	Channel
Guitar Direct/FX Return 1	In	Mic/InstIn 1/Mic/InstIn 2	Multi Mono
Guitar Direct	In	Mic/InstIn 1	Mono
FX Return 1	In	Mic/InstIn 2	Mono

If you rename either of a stereo port's channels, the port is switched to a multiple mono channel, and labels are updated accordingly.

If you want to switch back to a stereo channel, you can rename the Multi Mono channel.

Item	Description
	NOTE - ASIO port names are not saved per project. - In stereo pairs, odd-numbered ports represent the left channel; even-numbered ports represent the right channel. - Stereo pairs must consist of sequential channels. You cannot make stereo pairs from arbitrary channels. - If you want to restore a port's default name, delete the label in the NAME column, and the INTERNAL NAME is restored. - If you want to restore all port names, click the RESET NAMES button (or press Alt+N).
I/O	Indicates whether the port is an input or output port.
Internal Name	The default name of the port.
Channel	Indicates whether a port is a stereo, mono, or multiple mono.

MIDI Tab

Use the MIDI tab to set options for using MIDI devices with VEGAS Pro. To display this tab, choose PREFERENCES from the Options menu, then click the MIDI tab.

Item	Description
Make these devices available for MIDI output	Select the checkbox for each MIDI device that you want to use as a MIDI output for a control surface. For more information, see Using a control surface
Make these devices available for MIDI input	Select the checkbox for each MIDI device that you want to be available for a control surface.
Default All	Restores all MIDI preferences to the default settings.

VST Effects Tab

From the OPTIONS menu, choose PREFERENCES and select the VST EFFECTS tab to indicate where your VST plug-ins are installed.

Item	Description
VST search folders	Add, edit or remove paths to indicate where the application can find VST effects.
Select VST effects to be available as audio plug-ins	Select the checkbox for each VST plug-in that you want to make available to your VEGAS Pro projects. Clear a checkbox to exclude the plug-in. **NOTE** When you use a VST plug-in, VEGAS Pro will lock it for the remainder of your VEGAS Pro session. A lock 🔒 is displayed next to the checkbox to indicate that the plug-in cannot be removed until you close and restart the application.

Editing Tab

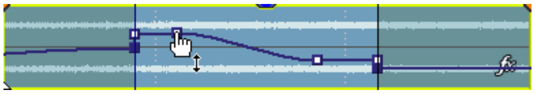
From the Options menu, choose PREFERENCES and select the Editing tab to specify options for editing on the VEGAS Pro timeline.

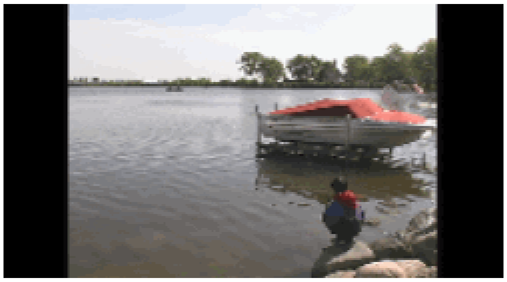
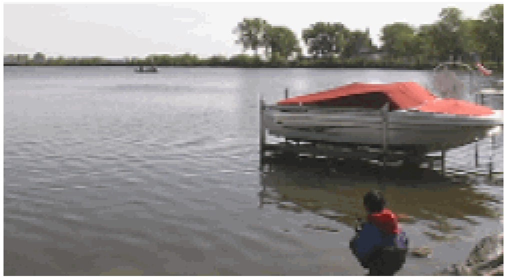
Item	Description
Enable looping on events by default	When this checkbox is selected, the LOOP event switch will be enabled for new events. When this switch is enabled, events will repeat if you drag the end of an event past the end of the media file.
Preserve pitch when stretching audio events	When this checkbox is selected, the pitch of an audio event is preserved when you hold Ctrl and drag the end of the event to change its duration. When the checkbox is cleared, audio events' pitch will increase when you make an event shorter and will decrease when you make an event longer. **TIP** If you change this setting during an editing session, the new setting will affect only media that you add to the timeline after changing the setting. To change the behavior for existing events on the timeline, use the TIME STRETCH / PITCH SHIFT controls on the Audio Event tab of the Event Properties dialog. For more information, see Editing event properties and Adjusting an event's length
Cut, copy, and delete grouped events	When this checkbox is selected, cutting, copying, or deleting an event will affect all events in the same group. For more information, see Cutting, copying, and pasting events and Grouping events
Do not quantize to frames for audio-only edits	When this checkbox is selected, edits to audio events (such as event moves, trims, and ASR times) are not quantized to frame boundaries even if QUANTIZE TO FRAMES is enabled. For more information, see Moving events Adjusting an event's length Event envelopes and Quantize to frames

Item	Description
Collapse loop region when no time selection is present	When this checkbox is selected, the loop region is reset when no data is selected. If the checkbox is cleared, the loop region will retain the last selection.
JKL/shuttle speed	Choose a setting from the drop-down list to set the speed that will be used for scrubbing the timeline with the JKL keys or with a multimedia controller. ⓘ For more information, see Scrubbing and Using a multimedia controller
Quick fade length for audio events	A rapid fade is applied to the edges of audio events to soften potentially harsh transitions that can result from cutting data or splitting events. Enter a value in the box to change the length of the fade. From the Options menu, choose QUICKFADE AUDIO EDITS to turn quick fades on or off. When you turn off quick fades, the edges of new events are not faded (existing fades are not removed).
New still image length	Enter a value in the edit box to specify the duration of events that are created when you add still images to the timeline.
Default time between CD tracks	Enter a value in the edit box to specify the length of time that is inserted between events when you add tracks for a disc-at-once audio CD from the Project Media window. ⓘ For more information, see Disc-at-once (DAO or Red Book) CD Burning

Item	Description
Cursor preview duration	Enter a value in the edit box to specify the length of the time that will be played when you preview the cursor. To preview the cursor, press the 0 key on the numeric keypad. A temporary selection is created (centered over the cursor) and playback begins automatically. Cursor preview will loop if LOOP PLAYBACK 🔁 is selected.
Automatically overlap multiple selected media when added	When this checkbox is selected, events will be overlapped when you drag several media files to the timeline. When the checkbox is cleared, events will be added end-to-end. To change the amount of overlap between events, adjust the AMOUNT setting in the CUT-TO-OVERLAP CONVERSION section of the dialog. **NOTE** Automatic Crossfades must be turned on to use this feature. For more information, see Automatic crossfades

Item	Description
Cut-to-overlap conversion	When you have two video events that are inserted back-to-back with no transition (referred to as a cut), you can convert the cut to a transition by dragging a transition from the Transitions window and dropping it between the events. You can also right-click the edge of either event, choose TRANSITION from the shortcut menu, and choose a transition from the submenu. The cut-to-overlap conversion settings will extend one or both of the events so they overlap, allowing room for the transition. Type a value in the edit box (or use the spin control) to specify the amount by which you want the events to overlap after conversion. (This setting also controls the overlap applied when the AUTOMATICALLY OVERLAP MULTI-SELECTED MEDIA WHEN ADDED checkbox is selected). From the ALIGNMENT drop-down list, choose the method you want to use to extend events: ● BEFORE CUT: The overlapping area will end at the cut/-cursor. ● CENTERED ON CUT: The cut/cursor will mark the center of the overlapping area. ● AFTER CUT: The overlapping area will start at the cut/-cursor.

Item	Description
Time selection envelope fades	When this checkbox is selected, all envelope points within a time selection are adjusted as you drag, and fades are applied to the beginning and end of the selection (additional envelope points are created as necessary):  Type a value in the edit box (or use the spin control) to specify the length of the fades that will be created. Choose a setting from the ALIGNMENT drop-down list to indicate where the fade should be applied: - OUTSIDE: Fades are applied before and after your time selection. - CENTERED: Fades are centered on the beginning and end of the time selection. - INSIDE: Fades are applied to the beginning and end of your time selection. Clear the TIME SELECTION ENVELOPE FADES checkbox if you want to edit envelope points individually.

Item	Description
Automatically crop video files / still images added to timeline	Select this checkbox if you want to automatically crop video files / still images to match your project's output frame proportions when adding them to the timeline.  Uncropped image in 16:9 widescreen project: pillarboxing is displayed  Cropped image: the image fills the screen with no pillarboxing
Default All	Restores the Editing page options to the default settings.

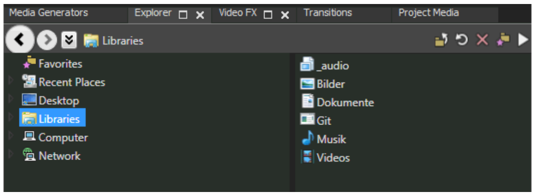
Display Tab

From the Options menu, choose PREFERENCES and select the Display tab to specify options for the appearance of the VEGAS Pro workspace.

Item	Description
Track colors	Use these controls to change the default colors used to display tracks in your project. Select a track from the TRACK drop-down list, and then click the color swatch to display a color picker. You can choose any color using the RGBA or HSLA controls. Click the ▦ button to switch between RGB and HSL color modes, or click the eyedropper to sample a color from your screen. When you click OK or APPLY, all tracks that used the selected color are updated.
Envelope colors	Use these controls to change the default colors used to display envelopes in the timeline. Choose an envelope type from the ENVELOPE TYPE drop-down list and click the color swatch to display a color picker, where you can choose any color using the RGBA or HSLA controls. Click the ▦ button to switch between RGB and HSL color modes, or click the eyedropper to sample a color from your screen.

Item	Description
Snap colors	Use these controls to change the default colors used to snapping indicators in the timeline. Choose an snap indicator type from the SNAP TYPE drop-down list and click the color swatch to display a color picker, where you can choose any color using the RGBA or HSLA controls. Click the button to switch between RGB and HSL color modes, or click the eyedropper to sample a color from your screen.
Icon color strength	Drag the slider to adjust the color intensity of icons in the VEGAS Pro window. Drag to the left to decrease the color saturation, or drag to the right to increase it.
Button Highlight Color	Use these control to set the background color of active toolbar buttons. Click the color swatch to display a color picker, where you can choose any color using the RGBA or HSLA controls. Click the button to switch between RGB and HSL color modes, or click the eyedropper to sample a color from your screen.
Interface Type	Select one of the Radio buttons below INTERFACE TYPE to change the look of the VEGAS Pro interface. Click the APPLY or OK button to finish. You will then get an alert stating that the application must be closed and restarted for the changes to take affect. Click OK and restart VEGAS Pro. To change your active window title bar colors, go to Control Panel | Personalization | Window Color and Appearance.

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Automatically hide docking area</td><td>Select this checkbox if you want the window docking area to hide automatically when you're not using it. Hover over the bottom of the VEGAS Pro window to show the window docking area.

NOTE If the DISPLAY TIMELINE AT BOTTOM OF MAIN WINDOW checkbox is also selected, double-click the splitter above the timeline to make the docking area visible again.</td></tr>
<tr><td>Position tabs at top of docked windows</td><td>Select this checkbox if you want to display tabs at the top of docked windows:

Media Generators
Explorer
Video FX
Transitions
Project Media
Libraries
Favorites
Recent Places
Desktop
Libraries
Computer
Network
_audio
Bilder
Dokumente
Git
Musik
Videos

</td></tr>
<tr><td>Allow floating windows to dock</td><td>When this checkbox is selected, windows will automatically be docked when you drag them over other windows in the VEGAS Pro workspace. You can hold the Ctrl key while dragging a window to prevent it from docking.

When this checkbox is cleared, windows will not dock unless you hold the Ctrl key.

For more information, see Using and Managing Docking Areas</td></tr>
<tr><td>Reverse Event Background color</td><td>This option swaps the foreground and background color of the events. For instance, in audio events the track color is used for the waveform display. With reverse on, this color is used for the background and the former background color is now the waveform color.</td></tr>
<tr><td>Use High DPI scaling (where available)</td><td></td></tr>
</table>

Item	Description
Default All	Restores the Display page options to the default settings.

CD Settings Tab

From the Options menu, choose PREFERENCES and select the CD Settings tab to specify to specify settings for burning and extracting audio from CDs.

Item	Description
Use strict Red Book specification for DAO validation	Select this checkbox if you want to be notified prior to burning a disc-at-once CD if anything about your CD project is against strict Red Book standards. For more information, see [Disc-at-once (DAO or Red Book) CD Burning]() These warnings are not critical, and in most cases you will not write an unreadable disc if you proceed. Clearing this checkbox will not suppress critical warnings that will result in an unreadable disc.
Include wide SCSI devices when searching for drives	Select this checkbox if you want to scan for wide SCSI CD drives when you attempt to extract data from or burn CDs. When the checkbox is cleared, VEGAS Pro will not scan for wide SCSI devices, which can increase compatibility with some USB device drivers that incorrectly identify themselves as wide SCSI.
Skip drive database; autodetect drive capabilities on startup	When the checkbox is cleared, an internal configuration file is used to determine your drive's capabilities. If you encounter problems burning discs, select this check box, and your drive will be scanned to determine its capabilities when the application starts.
Use SPTI direct	Select this checkbox if you want to use SPTI (SCSI Pass-Through Interface) to communicate with your CD burning drive.
Use legacy disc drivers	Select this checkbox to use the legacy VEGAS Pro disc drivers for burning discs. Clear this checkbox to use the Microsoft Image Mastering API (IMAPI) disc drivers to burn discs in VEGAS Pro software. This can be useful if burning discs with the legacy disc drivers is not working as you expect.
Default All	Restores all CD preferences to the default settings.

Sync Tab

Use the Preferences Sync tab to specify the options for setting up synchronization of other applications and devices with VEGAS Pro. To access this tab, choose PREFERENCES from the Options menu and click on the Sync tab.

Sync Settings

The following settings, available on the Sync tab, are used for setting up MIDI timecode generation from the VEGAS Pro timeline.

Item	Description
Generate MIDI Timecode settings	These settings are for setting up MIDI timecode generation from the VEGAS Pro timeline.
Output device	This option specifies the MIDI device to which the MIDI timecode will be sent. The MTC slave should also be set to this device.
Frame rate	This option specifies the frame rate for generating MIDI timecode. The MTC slave must be set to the same frame rate.
Generate MIDI Clock settings	These settings are for setting up MIDI clock generation from the VEGAS Pro timeline.
Output device	This option specifies the MIDI device to which the MIDI clock will be sent. The MIDI clock slave should also be set to this device.
Trigger from MIDI Timecode settings	These settings are for setting up MIDI timecode triggering from another application or external device.
Input device	This option specifies the MIDI device from which the MIDI timecode will be received. The MTC master should also be set to this device.
Frame rate	This option specifies the frame rate at which the MTC master will send timecode to VEGAS Pro.
Advanced	Clicking on this button opens the Advanced Sync properties dialog for the selected MIDI settings.
Default All	Click on the DEFAULT ALL button to restore all Sync preferences to the default settings.

MIDI Timecode Input - Advanced Settings

The MIDI Timecode Input dialog appears when you have clicked on the ADVANCED button on the Sync tab of the Preferences dialog. This dialog contains advanced options for MIDI timecode input. It is only displayed if a device is selected for MTC input on the previous dialog.

Item	Description
Free-wheel for time code loss	When this option is selected, playback will continue for a specified period of time without chasing if timecode is lost for some reason. Enabling this option can compensate for infrequent losses in timecode. If losses in timecode are frequent, troubleshooting should be done to find the cause of the problem.
Free-wheel slack time	Use the up and down arrows or enter a value in the edit box to specify the amount of time that timecode can be lost before the FREE-WHEEL PLAYBACK TIME starts. A longer time is more tolerant of breaks in the incoming timecode.
Free-wheel playback time	Specifies the amount of time that playback will continue after the FREE-WHEEL SLACK TIME has been exceeded.
Synchronization delay time	Use the up and down arrows or enter a value in the edit box to specify the amount of time it takes for to synchronize itself to incoming timecode. On slower computers, this time should be set to approximately two seconds. On faster computers, it may be set lower. **NOTE** Setting this value too low can sometimes result in audible pitch shifting at the start of playback.
Offset adjust	If synchronization is consistently behind or ahead of your MTC generator, enter a value in the box to adjust a synchronization offset with quarter-frame accuracy. ● If synchronization is behind, set this value to a negative number. A setting of - 4 usually does the trick. ● If synchronization is ahead, set this value to a positive number. A setting of +4 usually does the trick, though it is rare that VEGAS Pro will sync ahead.

MIDI Timecode Output - Advanced Settings

This tab contains advanced options for MTC (MIDI timecode) input. It is only displayed if a device is selected for MTC input on the Sync tab of the main Preferences dialog.

Item	Description
Full-frame message generation	This option specifies when to send full-frame timecode messages while Generate MIDI Timecode is enabled. Full-frame messages are used by some external synchronizable audio devices to seek to a proper location prior to actually starting synchronization. Tape-based recorders especially benefit from seeking to full-frame messages because of the time it takes to move the transport to the proper location. However, full-frame messages are ignored by some devices and may actually cause unexpected behavior in other devices. Check your hardware documentation to find out if they support full-frame messages.

MIDI Clock Output - Advanced Settings

The MIDI Clock Output dialog appears when you have clicked on the ADVANCED button on the Sync tab of the Preferences dialog. This dialog contains advanced options for MIDI Clock output. It is only displayed if a device is selected for MIDI Clock output on the previous dialog.

Item	Description
Send Start instead of Continue when beginning playback	Select this checkbox if you want to send a Start command rather than a Continue command when GENERATE MIDI CLOCK is enabled. When the checkbox is cleared, a Continue command is sent, as this type of command allows the chasing device to start from a specific time. However, some older sequencers that support MIDI clock chase do not support the Continue command and must start playback from the beginning every time.
Song Position Pointer generation	This option specifies when to send Song Position Pointer messages while GENERATE MIDI CLOCK is enabled. Song Position Pointer messages are used by MIDI applications and devices to seek to a proper location prior to actually starting synchronization.

External Control & Automation Tab

Use the External Control & Automation tab to set up and customize control surfaces and adjust settings for automation envelopes. To display this tab, choose PREFERENCES from the Options menu, then click the External Control & Automation tab.

> **NOTE** You can connect one Mackie Control Universal (with up to four Mackie Control Universal Extenders), one Frontier TranzPort, on PreSonus FaderPort, and up to five generic MIDI controllers.

> **TIP** The selected device isn't enabled until you select the EXTERNAL CONTROL command from the Options menu.

Item	Description
Smooth and thin automation data after recording	When recording automation, VEGAS Pro creates as many envelope points or keyframes as possible to represent your control movements. Select this checkbox if you want to reduce the number of envelope points/keyframes after recording is finished. For more information, see Recording track envelope and keyframe automation
Set controls to default values when automation is turned off	Select this checkbox if you want controls to return to their default values when set the track's automation recording mode to AUTOMATION OFF. Automated effect parameters do not have default settings and will retain their last-set values when you turn automation off. When the checkbox is cleared, controls will retain their last-set values when you turn automation off. For more information, see Recording track envelope and keyframe automation

Item	Description
Available devices	Choose a device from each drop-down list, and then click ADD to choose the control surfaces that will be available to VEGAS Pro. Adding a device loads its default profile. **FURTHER INFORMATION** ● Using a control surface ● Using a Mackie Control ● Using a Frontier TranzPort ● Using a PreSonus FaderPort ● Using a Generic Control Surface
Active control devices	Lists the control devices that you've added. If you want to customize the behavior of the controller, double-click the device name.
New audio envelopes	Choose a setting from the drop-down list to set the default fade type that will be used when you add volume and panning envelopes. For more information, see Audio track automation This setting is used only when you create new envelopes. When you add a point to an existing envelope, the new point always uses the same fade type as the preceding envelope point.

Item	Description
New audio event gain	Choose a setting from the drop-down list to set the default fade type for the fade-in and fade-out curves on audio event gain envelopes. ⓘ For more information, see Event envelopes This setting is used only for events that you place on the timeline after changing the setting. Existing events will use the default fade type that was active when they were added to the timeline.
New audio FX automation envelopes	Choose a setting from the drop-down list to set the default fade type that will be used when you add audio effect automation envelopes. ⓘ For more information, see Automating audio effect parameters This setting is used only when you create new envelopes. When you add a point to an existing envelope, the new point always uses the same fade type as the preceding envelope point.
New video envelopes	Choose a setting from the drop-down list to set the default fade type that will be used when you add fade-to-color, composite level, transition progress, motion blur, supersampling, and event velocity envelopes. This setting is used only when you create new envelopes. When you add a point to an existing envelope, the new point always uses the same fade type as the preceding envelope point.

Item	Description
New video event opacity	Choose a setting from the drop-down list to set the default fade type for the fade-in and fade-out curves on video event opacity envelopes. For more information, see Event envelopes This setting is used only for events that you place on the timeline after changing the setting. Existing events will use the default fade type that was active when they were added to the timeline.
New video FX keyframes	Choose a setting from the drop-down list to set the default keyframe type that will be used when you add video track effect keyframes. For more information, see Adding video effects This setting is used only when you add new effects. When you add a keyframe to an existing effect, the new keyframe is created as the same type as the preceding keyframe.
New video motion keyframes	Choose a setting from the drop-down list to set the default keyframe type that will be used when you add track motion, parent track motion, 3D track motion, or pan/crop keyframes. For more information, see Editing track motion3D compositing and Panning and Cropping Video Events This setting is used only when you add new effects. When you add a keyframe to an existing effect, the new keyframe is created as the same type as the preceding keyframe.
Track Motion default smoothness	Type a value in the box (or use the spin control) to set the default Smoothness value for track motion and 3D track motion keyframes.

Item	Description
Pan/Crop default smoothness	Type a value in the box (or use the spin control) to set the default Smoothness value for event pan/crop keyframes. For more information, see Panning and Cropping Video Events
Default All	Restores all External Control & Automation preferences to their default settings.

File I/O Tab

Item	Description
Enable auto-detection of 360° media	When this checkbox is selected, VEGAS Pro will recognize 360° media when loaded and sets the project properties to 360° output automatically.
Render large Wave files as Wave64	The .wav format is limited by a maximum file size of ~2GB (4GB if the ALLOW WAVE RENDERS UP TO 4 GB checkbox is selected). When this checkbox is selected, you can render larger files as Wave64 files.
Allow Wave renders up to 4 GB	Select this checkbox to enable support for WAV files up to 4GB before switching to WAV64. Clear the checkbox for compatibility with other software applications.
Ignore fact chunk when opening compressed WAV files	When this checkbox is selected, VEGAS Pro will ignore fact chunks in compressed WAV files. Compressed WAV files use fact chunks to specify how many actual samples are represented in the file. If a compressed file is improperly authored, this may cause some of the compressed data to not be loaded. If you suspect that not all sound data is being loaded from a compressed file, try checking this option and reopening the file. **TIP** If you change the setting of this check box, please delete any proxy (.sfap0) files associated with compressed WAV files.
Import MXF as multichannel	Select this checkbox if you want to import MXF files from XDCAM cameras and decks with multichannel audio. When the checkbox is cleared, audio from MXF files will be imported as stereo.

Item	Description

Enable no-recompress rendering	Select this checkbox if you want to pass through unedited frames without recompression (smart render) for the following formats:
	- DV AVI
	- DV MXF
	- IMX MXF (IMX 24p MXF is not supported for no-recompress rendering)
	- XAVC Intra MXF
	- HD MXF
	- MPEG-2 (for files such as those from HDV and DVD camcorders)
	- Panasonic P2
	For more information, see Working with P2 Video
	- XDCAM EX supports smart rendering across the following formats:
	  - SP 18.3 Mbps CBR 1280x720p to/from XDCAM EX and HDV HD-1
	  - SP 25 Mbps CBR 1440x1080i to/from XDCAM EX, XDCAM HD, and HDV HD-2
	  - HQ 35 Mbps VBR 1440x1080 to/from XDCAM EX and XDCAM HD
	  - HQ 35 Mbps VBR 1280x720p to/from XDCAM EX
	  - HQ 35 Mbps VBR 1920x1080 to/from XDCAM EX
	In order to perform rendering without recompression, the

Item	Description
	width, height, frame rate, field order, profile, level, and bit rate of the source media, project settings, and rendering template must match. Frames that have effects, compositing, or transitions applied will be rendered.
Enable QSV Encoding and Decoding (where available)	This option turns on Intel Quick Sync Video (QSV) hardware acceleration for encoding and decoding, where supported.
Enable OpenCL/GL Interop for Intel GPU	When checked, this enables the interoperability between OpenGL and the Graphics Library for Intel GPUs for improved performance.
Enable direct GPU import path	If this is enabled, VEGAS Pro will use a direct path to import media using the GPU, which can improve performance for GPU-accelerated formats.
Favor audio sync when playing Variable Frame rate (VFR) media	This setting, when checked, prioritizes keeping audio in sync over maintaining smooth video playback when playing media with variable frame rates.
Enable Hardware Decoding for supported formats	This checkbox switches hardware decoding of AVC/HEVC media on and off, where applicable. Select the Hardware Decoder (NVIDIA NVDEC or Intel QSV) to use in the list box below. Hardware decoding works only, when the right hardware is available and the media is suitable for hardware decoding.
Enable MKV Reader (experimental)	Activates the new, experimental file reader for the .mkv Matroska video format, a free and open source video format. ℹ For more information, see mastroska.org.

Item	Description
RAW Processor	Specify the device you want to use for RAW processing. This delinks the RAW processing accelerator from the video processing accelerator and enables you to specify the best option for both of them. This is especially useful to you if you have multiple GPUs in your system because you can spread the processing work between two of them. This gives you higher overall GPU utilization and access to more processing power.
Log Plugin loading/Reads/Renders	In case you have technical problems with your VEGAS Pro project you can get a log file when checking these options. Even if you don't understand each and every entry of the log file it can help you to identify problematic media files or plug-ins in your project. It is possible to log the loading process of plug-ins and media files and the render process. To activate logging, switch the according list box from OFF to BASIC, or for a more detailed logging to DETAILED. The Log files can also be helpful for the technical support to identify problems. You find the Log files in c:\Users\[username]\AppData\Local\VEGAS Pro\23.0\, they are normal text files with the file extension .log

Deprecated Features

Various older program functions and components, which have meanwhile been replaced by more powerful ones, are hidden as standard in VEGAS. On this tab you can restore these functions.

> **NOTE** The features are still present in the program when loading older project that use it but are hidden to prevent you from using it for new projects

Item	Description
Allow legacy GPU rendering	Selecting this option will allow access to GPU rendering options for Main Concept AVC/AAC and Sony AVC/MVC renderers.
Enable ProType Titler	Shows the legacy ProType titler in the Generated Media window.
Enable the QuickTime plugin	Enables use of the obsolete Apple "QuickTime for Windows" plugin for accessing old .mov files, when the plugin is present. This plugin must be installed separately and is not supplied by MAGIX.
Enable legacy text	Shows the ancient Text generator in the Generated Media window.
Enable Legacy stabilizer	Shows the old Video Stabilizer in the Video FX window.
Enable Smart Mask	Shows the older AI feature which has been replaced with AI Smart Mask 2.0.
Enable XDCam Explorer	Makes the XDCam Explorer window available in the View | Window menu.
Enable Import DVD Camcorder Disc	Makes the Import DVD Camcorder Disc entry available in the File menu.
Activate Sony Wireless Media Adapter	Makes the Sony Wireless Media Adapter functionality available in the Tools menu.

Item	Description
Activate Print to tape	Makes the Print to tape functionality available in the Tools menu.
Activate Capture video	Makes the Capture Video functionality available in the File menu.
Activate VEGAS Pro Connect	Makes the VEGAS Pro Connect functionality available in the File menu.

AI Smart Mask

> **NOTE**
> This feature is no longer supported and may be removed from the application in a future version.
>
> To use this feature, click OPTIONS | PREFERENCES to open the dialog.
>
> In the DEPRECATED FEATURES tab, select the checkbox.

This plug-in analyzes a video frame and uses artificial intelligence technology to identify objects in the frame that you can generate a mask for. You can filter out any objects below your accepted confidence level. Once the tool has identified an object you want to create a mask for, the tool will add a Bézier Masking plug-in to your FX chain with a mask already in place. You can then fully adjust your new mask as you see fit.

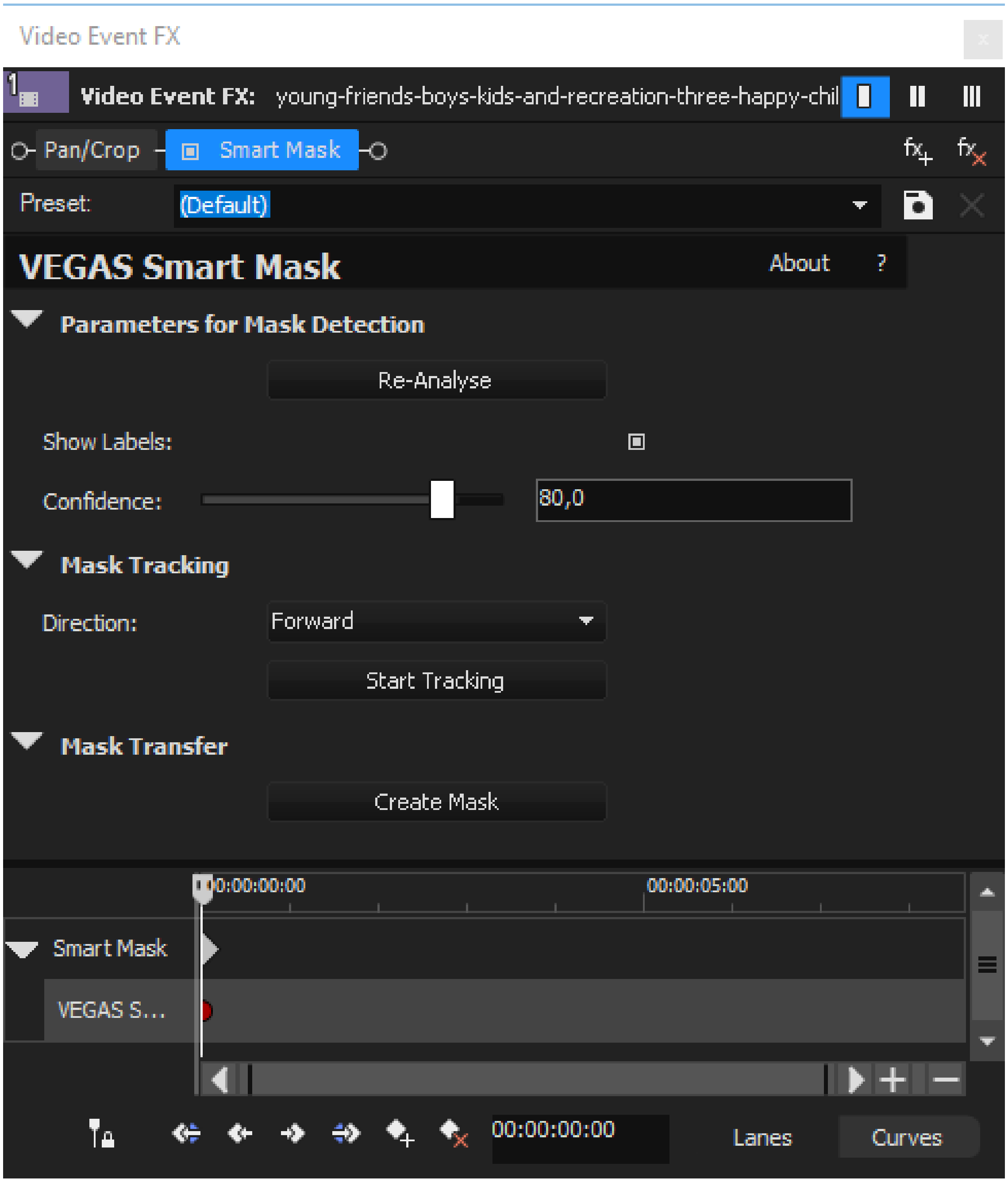
1 Identifying Objects and Adjusting Confidence Levels

1. Select the event on your timeline that holds the video clip you want to mask.
2. Move your timeline cursor to a frame that shows the object you want to mask so you can see that frame in the Video Preview window.
3. Click the Video FX tab in the window docking area to bring that window forward.
4. Select Smart Mask from the list of plug-ins.

5. Click and drag the Smart Mask plug-in onto the selected video clip on the timeline..
6. In the Video Event FX window, click the Analyze button. It will take a few moments for the tool to analyze your video frame.

   With analysis complete, you'll see that the tool has identified any objects in your frame that the algorithm recognizes. Rectangles bound all objects that have been identified.

> **NOTE** If you don't see any rectangles, lower the Confidence slider until you see a rectangle around the object you want to mask. Raising the confidence level can filter out rectangles that you're not interested in and help you focus on the one you want.


Video Event FX
Video Event FX: young-friends-boys-kids-and-recreation-three-happy-chil
Pan/Crop
Smart Mask
VEGAS Smart Mask
About
?
Parameters for Mask Detection
Re-Analyse
Mask Tracking
Start Tracking
Mask Transfer
Create Mask
00:00:00:00
00:00:05:00
Smart Mask
VEGAS S...
00:00:00:00
Lanes
Curves

Preset: (Default)

Show Labels: ▣

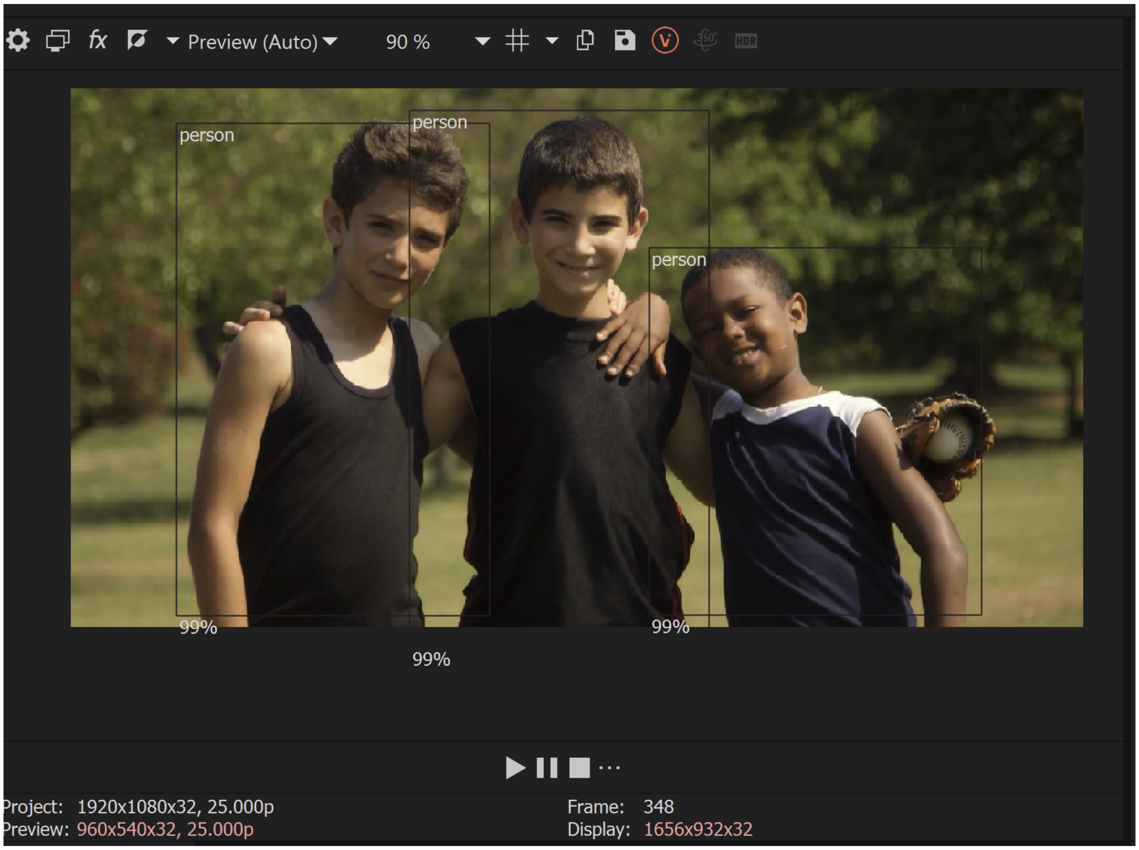
Confidence: 80,0

Direction: Forward

Show labels and confidence levels:

» Select the "Show Labels" checkbox in the Video Event FX window.

This adds a label of what the AI thinks it has identified in the upper left of the bounding rectangle. It also displays the confidence level below the rectangle. For instance, a confidence level of 59% indicates that the AI is 59% confident that it has correctly identified the object as what it has labeled it.



Project: 1920x1080x32, 25.000p
Preview: 960x540x32, 25.000p
Frame: 348
Display: 1656x932x32

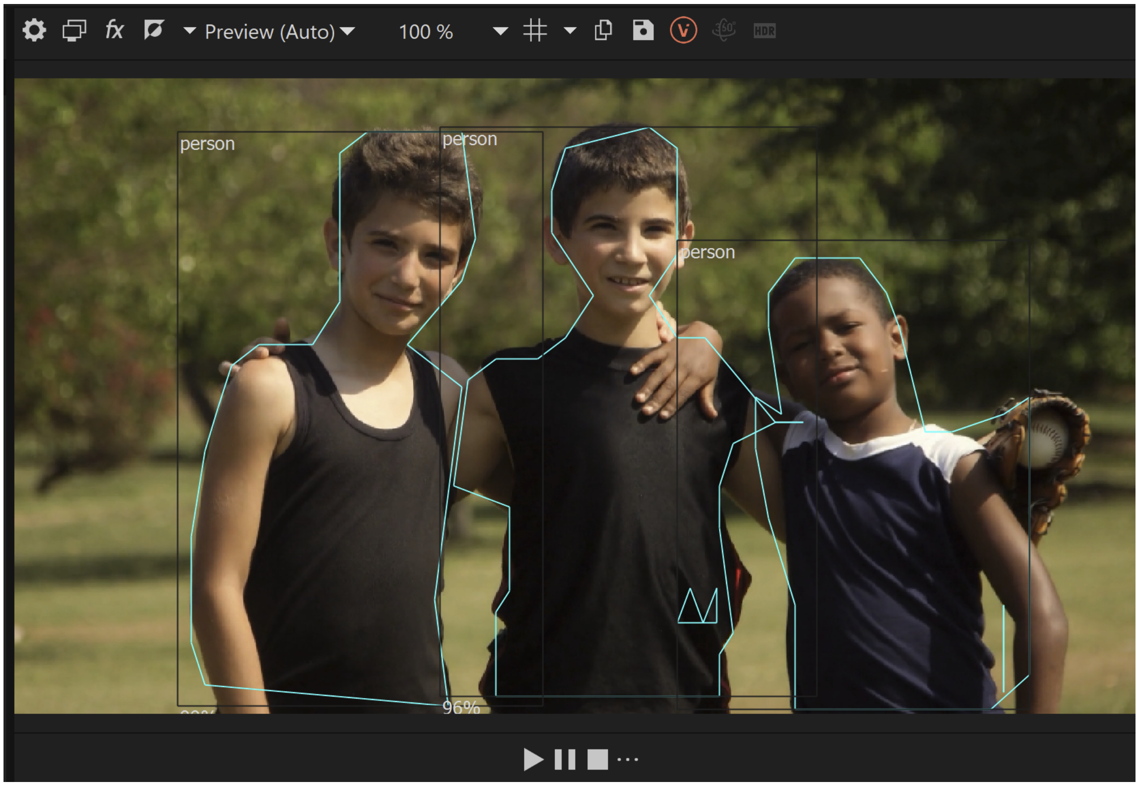
2 Creating and Refining Masks

1. Click on the rectangle that encloses the object you want to mask. A mask line will be added within the rectangle and around the object.

> **TIP**
>
> You can create up to five masks for a single video frame.
>
> Click the first rectangle that you want to use to create a mask
>
> Hold the Ctrl key as you click on up to four more rectangles. This creates mask shapes around each of the selected objects.

2. Use the Shape slider to change the accuracy of the mask shape around the object.
3. Once the mask is adjusted, click the "Transfer" button. A Bézier mask plug-in will be added to your FX chain.
4. Click the Bézier Masking button in the FX chain.
5. Use the Bézier masking tools to further adjust and refine the mask as needed.

For more information, see Bézier Masking



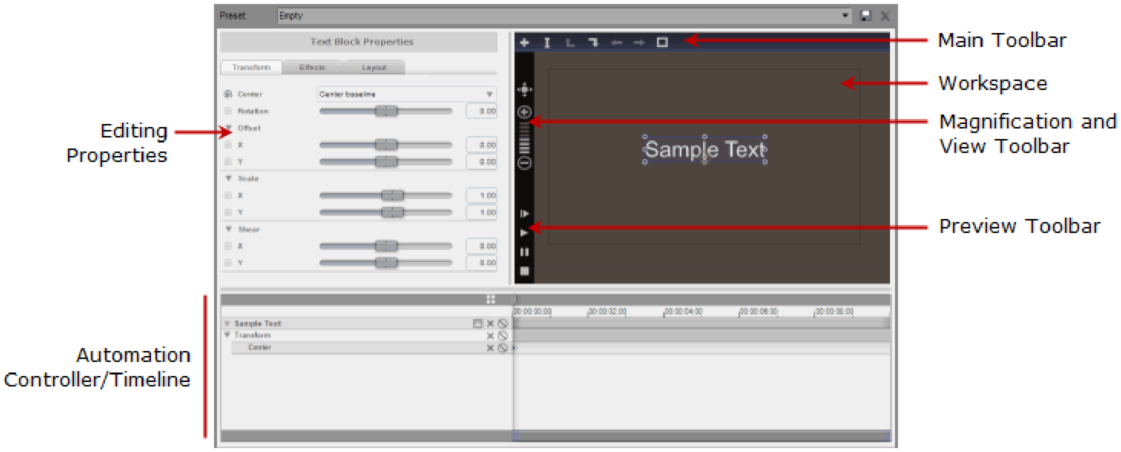
Working with the ProType Titler

The following topics will guide you through the fundamentals of creating text and titles with the ProType Titler.

> **NOTE**
> This feature is no longer supported and may be removed from the application in a future version.
>
> To use this feature, click OPTIONS | PREFERENCES to open the dialog.
>
> In the DEPRECATED FEATURES tab, select the ENABLE PROTYPE TITLER checkbox.

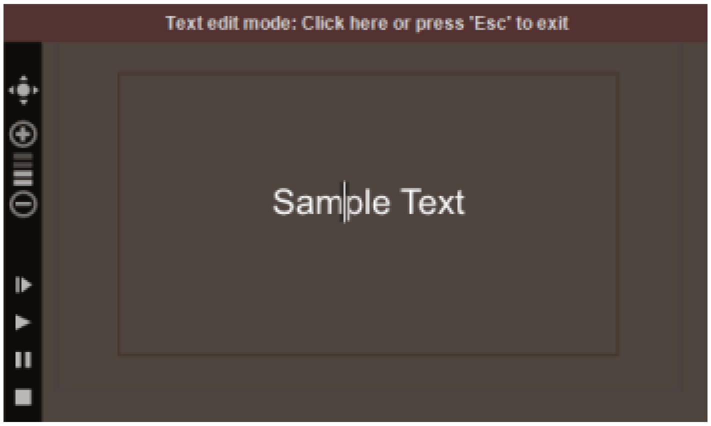
The ProType Titler Window

When you start the ProType Titler to create or edit a title, the following window is displayed.


Main Toolbar
Workspace
Magnification and View Toolbar
Preview Toolbar
Editing Properties
Automation Controller/Timeline
Preset
Empty
Text Block Properties
Transform
Effects
Layout
Center
Center baseline
Rotation
Offset
X
Y
Scale
Shear
Sample Text
Sample Text
Transform
Center

The Workspace

The workspace is where you will add and edit text blocks.



Text edit mode: Click here or press 'Esc' to exit

Sample Text

- You can double-click a blank area of the workspace to add a new text block.
- You can double-click a text block to edit its contents.
- To resize a text box, click it to select it, and then use the drag handles on the edges of the box.

You can use the toolbars in the workspace to navigate text and characters, magnify or pan the workspace, or preview your title.

The ProType Titler Toolbar

The toolbar is displayed at the top of the workspace and allows you to add, navigate, and toggle aspect-ratio lock for text objects.

Button	Description
✚ Add New Text Block	Click this button (or double-click the workspace) to add a new text block.
I Edit Text	Click this button to edit the text in the selected text block.
↰ Navigate to Parent	Selects the parent object of whatever you have selected in the workspace. For example, if you have a single letter selected in a text block, clicking this button would select the word that contains the selected letter. Clicking again would select the line of text that contains the selected word (if your text block contains multiple lines of text). Clicking again would select the text block.
↴ Navigate to Child	Selects the next-smallest object from whatever you have selected in the workspace. For example, if you have a text block selected, clicking this button would select the first line of text. Clicking again would select the first word in the first line of text. Clicking again would select the first letter of the first word.
⬅ Navigate to Previous Peer	Moves the selection to the previous item of the same type, For example, if you have a word selected, clicking this button would move the selection to the previous word. If you had a line of text selected, clicking this button would move the selection to the previous word.
➡ Navigate to Next Peer	Moves the selection to the next item of the same type, For example, if you have a word selected, clicking this button would move the selection to the next word. If you had a line of text selected, clicking this button would move the selection to the next word.

Button	Description
▣ Lock Aspect	Click to lock the aspect of text blocks in the workspace. When the button is selected (☑), adjusting the width or height of a text block maintains the proportions of the text block. Hold Shift while dragging the edge of a text block to resize it and change its width and height independently. When the button is not selected (▣), you can adjust the width or height of a text block independently. Hold Shift to adjust height and width proportionally.

The Magnification and View Toolbar

The magnification and view toolbar helps you get around in the workspace. You can zoom in or out to see fine detail or the big picture, and you can center the frame in the workspace.

> **TIP** To zoom in or out quickly, hover over the portion of the workspace you want to zoom and roll your mouse wheel forward or back.

Button	Description
✥ Center Display	Double-click to center the frame in the workspace. Centering helps you find your bearings when you've zoomed in and panned the display. Drag the icon to pan the workspace.
⊕ Zoom In	Click to zoom in or out in the workspace, or click a bar in the zoom indicator between the buttons to jump to a zoom level.
⊖ Zoom Out	

The Preview Toolbar

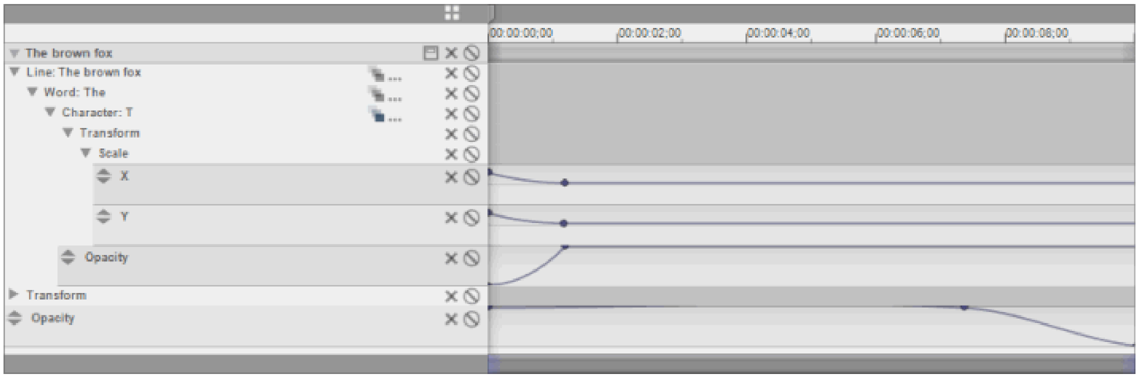
You can use the preview toolbar to check your animated titles without leaving the ProType Titler interface. Use the buttons in the preview toolbar to start, stop, and pause playback. Your title is played in the workspace window.

> **NOTE** The preview toolbar plays your title only. If you want to see your title composited in your project, use the main Vegas Pro Video Preview window.

Button		**Description**
⏮	Play from Start	Plays your title from the beginning of the generated media event.
▶	Play from Cursor	Begins playback from the cursor position in the automation controller/timeline.
⏸	Pause	Temporarily suspends playback.
⏹	Stop	Halts playback.

The Automation Controller/Timeline

The automation controller/timeline is displayed at the bottom of the Video Media Generators dialog and is used to add and remove keyframes and control the parameters for animated titles.


00:00:00;00
00:00:02;00
00:00:04;00
00:00:06;00
00:00:08;00
The brown fox
Line: The brown fox
Word: The
Character: T
Transform
Scale
X
Y
Opacity
Transform
Opacity

Automate a parameter

You can use keyframes to automate text block and character properties to create dynamic effects and animate text.

1. Navigate to the parameter you want to automate in the Properties pane.
2. Select the TOGGLE AUTOMATION button .
3. Click in the timeline to position the cursor where you want to create a keyframe.
4. Adjust the control to create a keyframe at the cursor position.
5. Create and edit keyframes as needed.

Add a keyframe

In the automation controller/timeline, double-click the position where you want to add a keyframe.

The new keyframe’s attributes are copied from the previous keyframe to allow you to make subtle changes without recreating all your settings.

To keep the automation controller/timeline from becoming cluttered, you can expand and collapse keyframe rows using the buttons on the left side of the window:

▶	Click to expand a keyframe row.
▼	Click to collapse an expanded keyframe row.
⬍	Click to maximize a keyframe row for detailed editing.
⧗	Click to minimize a keyframe row.

Cascade keyframes

When you animate a character, word, or line of text, you can choose to cascade your keyframe settings to sibling items to simplify creating complex animation.

For example, if you wanted to display a title that appears to drop in from above the screen, you could keyframe the Y offset control to animate the first word, and then select the TOGGLE CASCADE button to repeat that animation across the rest of the words in the line.

Click the CASCADE PROPERTIES button to display the Cascade Settings dialog, where you can adjust the duration of the cascade, the cascade range (whether you want to cascade keyframes to subsequent lines in a text block, words in a line, or words in a text block), and adjust the delay curve.

For an example of how you can use cascading, click here.

Remove a keyframe

To remove a keyframe from an envelope, right-click it and choose Delete from the shortcut menu.

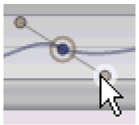
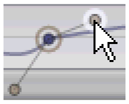
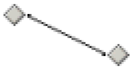
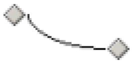
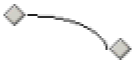
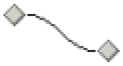
Bypass a keyframe

To bypass a keyframe row, click the ⊘ button in the keyframe row. The automation settings are ignored, but the envelope and keyframes are preserved.

To remove a row of keyframes, click the ✖ button in the keyframe row. The keyframes and envelope are deleted.

Change the curve between keyframes

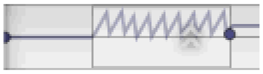
To change the curve between keyframes, right-click an envelope point and choose a setting from the shortcut menu:

Setting	Description	Looks Like
Auto	Allows the ProType Titler to choose the best curve for the envelope line.	
Manual	Displays a handle that you can drag to adjust the tension on the envelope line.	
Split Manual	Displays a handle that you can drag to adjust the tension on each side of the envelope line.	
Linear	Parameters are interpolated in a linear path.	
Fast	Parameters are interpolated in a fast logarithmic path.	
Slow	Parameters are interpolated in a slow logarithmic path.	
Smooth	Parameters are interpolated along a smooth, natural curve.	

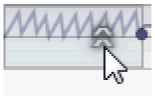
Apply a preset curve

You can use the ADD CURVE shortcut menu to add a curve quickly without creating envelope points manually.

1. Automate a parameter.
2. Click in the timeline to position the cursor where you want the curve to begin.
3. Right-click and choose ADD CURVE from the shortcut menu. You can click a preset name to see an animated example of the curve at the bottom of the menu.
4. Double-click a preset name to add it to the timeline.
5. Click to position the end of the curve. An event is placed on the timeline:



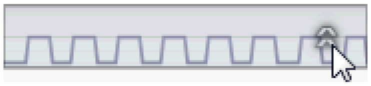
6. If you want to change the curve's settings, click the button at the right edge of the event



7. If you want to delete a curve, right-click the event and choose DELETE from the shortcut menu.
8. If you want to save a curve to the Curves menu, right-click the event and choose SAVE AS CUSTOM CURVE from the shortcut menu.

Edit a curve

If you want to save a curve to the Curves menu, right-click the event and choose PROPERTIES from the shortcut menu, or click the button on the event:



Move keyframes

After you've set your keyframes/envelope points, you may need to adjust their positions along the timeline. Drag a keyframe to a new position to move it.

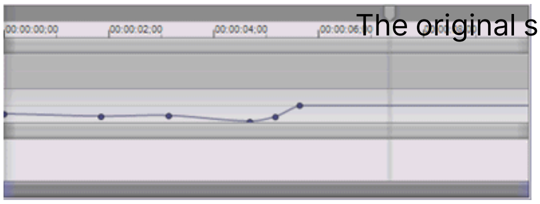
Hold Ctrl while clicking to select multiple keyframes.

Press and hold Shift before dragging to move an envelope point vertically without changing its horizontal position.

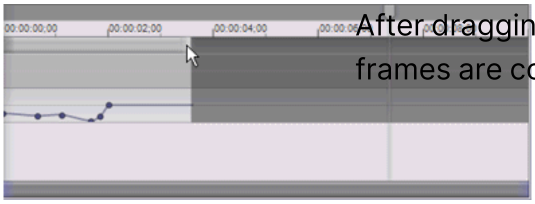
Press and hold Alt before dragging to move an envelope point horizontally without changing its vertical position.

Expand or compress keyframes

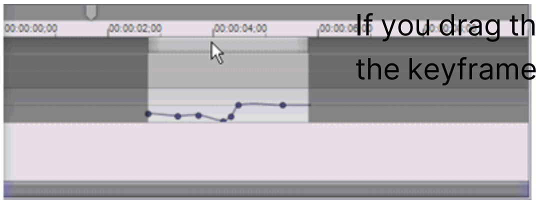
If you want to change when animation occurs for a text block or expand/collapse keyframes, you can adjust the text block's event in the automation controller/timeline.


00:00:00;00
00:00:02;00
00:00:04;00

The original set of keyframes.


00:00:00;00
00:00:02;00
00:00:04;00

After dragging in the right edge of the event, the keyframes are compressed together.


00:00:00;00
00:00:02;00
00:00:04;00

If you drag the middle of the event, you can change when the keyframes occur in the text block.

Save a title as a collection

If you create a title you'd like to use again including text and keyframes you can save them to a collection.

Click the SAVE TO COLLECTION button ▣ to save a keyframe row as a preset. The Collection menu is displayed with an edit box so you can type a name for the collection.

To recall a preset, click the APPLY FAVORITE button ⊞ and double-click a preset to add it to the timeline in the automation controller/timeline.

> **TIP** If you want to transfer your collections to another computer or share them with another user, you can copy the XML files from your C:\USERS\<USERNAME>\APPDATA\ROAMING\VEGAS\TITLER 1.0\COLLECTION folder and save them to the same folder on the target computer.

Adding a Title to Your Project

Creating a title with the ProType Titler is simple:

1. If the Media Generators tab isn't already visible, choose MEDIA GENERATORS from the View menu.
2. Select PROTYPE TITLER in the left pane of the Media Generators window.

   The thumbnail images in the right pane represent each of the existing presets for the selected generator. Hover your mouse pointer over a preset to see an animated example.
3. Drag a preset to the timeline to create an event. You can then add text blocks to the generator, use the properties pane to edit the layout and appearance of your text, and use keyframing to animate text.

Adding Text Blocks

Each text element in the workspace is called a text block.

You can add any number of text blocks to a generated-media event.

1. To create a text block, click the ⊞ button in the main toolbar, or double-click the workspace where you want to add a text block.

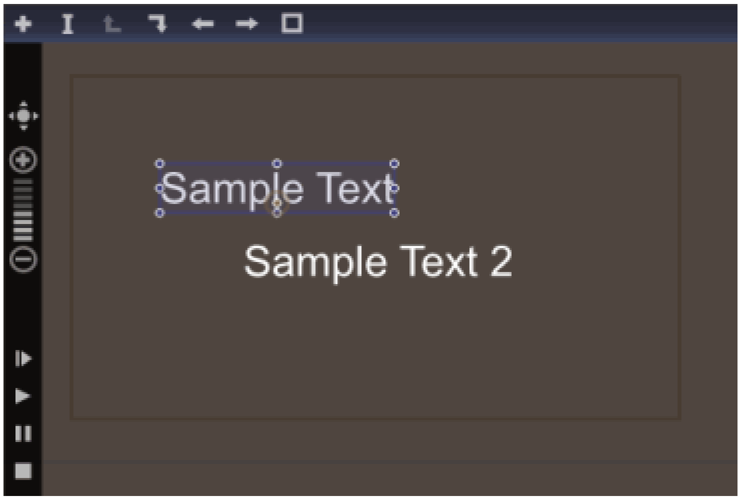
   A new text block containing "Sample Text" is created, and you can type new text in the block.
2. When you're ready to leave text-edit mode, press `Esc` or click the top of the workspace.

> **TIP**
> - You can also paste text from your clipboard. Plain text is added when you paste; fonts and styles are not supported.
> - If you need to use special symbols, right-click the workspace while in text-edit mode and choose PUNCTUATION AND SYMBOLS from the shortcut menu. A balloon is displayed where you can click a symbol to add it to your text block.
> - To switch a text block between horizontal and vertical orientation, right-click the workspace and choose VERTICAL ORIENTATION from the shortcut menu.

Selecting Text

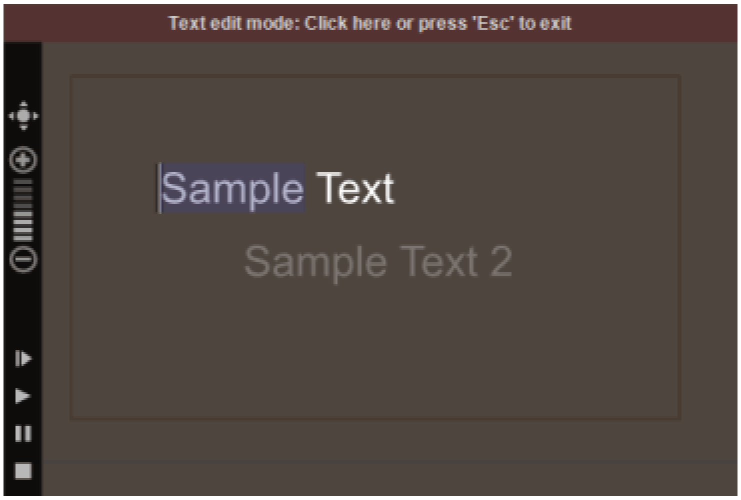
Editing in ProType Titler is based on your selection: depending on what you have selected in the workspace, different controls are displayed in the properties pane.

When a text block is selected, drag handles are displayed around the block:



- You can drag the handles to resize the block, or you can drag from the center to move the block in the workspace.
- When a text block is selected, you can use the properties pane to change the size, position, or rotation of the text block; change the opacity of the text, apply a gradient fill, or apply blur, drop shadow, or glow effects; or adjust line spacing, selection, or create a path for your text to follow.
- You can use the buttons in the main toolbar to move the selection to parent/child objects or navigate across objects at the same level. You can use this method to select individual words, letters, or lines to edit.

When you double-click a text block, you enter text edit mode, and you can select text in the same way you work with text in a word processor:



Text edit mode: Click here or press 'Esc' to exit

Sample Text

Sample Text 2

When text is selected in a text block, you can use the properties pane to change the appearance of the type: you can change the font, size, and style, and spacing; choose the fill and outline colors; or add strikethrough or underlining.

Editing Text Properties

When you select text in the workspace, you can use the Properties pane to change the appearance of the text.

The Text page controls the appearance of the type. You can change:

- the font, size, and style
- its vertical or horizontal spacing, or
- adjust the space between lines of text

The Style page controls the colors used to draw your text: you can adjust the fill color, stroke (outline) color, background color, or add strikethrough or underlining.

The OpenType page displays controls used to configure OpenType fonts.

Text controls

Item	Description
Font family	Click the control and choose a font from the drop-down list to choose the font used to draw the selected text.
Font size	Drag the slider to adjust the size of the selected text. The **Font size** slider is most useful for adjusting the relative sizes of text items within a text block. When you select a text block, you can use the Transform page to scale each text block.
Font style	Click the control and choose a setting from the drop-down list to indicate whether you want to draw normal or italic text.
Font weight	Click the control and choose a setting from the drop-down list to adjust the thickness of the selected text.
Tracking	Drag the slider to set the amount of horizontal space between text characters. Drag right to increase spacing, or drag left to decrease spacing (low settings will cause characters to overlap or to appear in reverse reading order)
Slant	Drag the slider to apply a slant to the selected text: drag right to apply a forward slant, or drag left to apply a backward slant.
Line alignment	Click the control and choose a setting from the drop-down list to indicate whether you want to align the selected text to the right side (near), center, or left side (far) of the text block.
Line margin	Drag the slider to set the amount of vertical space lines of selected text. Drag right to increase spacing, or drag left to decrease spacing (low settings will cause lines to overlap or to appear in reverse order)

Style controls

Item	Description
Style	Click the ▶ button to expand controls for adjusting fill and stroke, or click the ▼ button to hide the controls.
Fill color	Click the color swatch to display a color picker that you can use to change the color and transparency used to draw the selected text.
Fill color	Click the color swatch to display a color picker that you can use to change the color and transparency used to outline the selected text.
Fill color	Drag the slider to adjust the width of the outline applied to the selected text.
Fill color	Click the control and choose a setting from the drop-down list to indicate whether the outline should be drawn over or beneath the selected text.
Background	Select the checkbox if you want to apply a colored background to the selected characters. Click the ▶ button to choose a background color, or click the ▼ button to hide the controls.
Color	Click the color swatch to display a color picker that you can use to change the background color (and transparency) displayed behind the selected text
Strikethrough	Select the checkbox if you want to draw a line through the selected characters. Click the ▶ button to choose a strikethrough color and line thickness, or click the ▼ button to hide the controls.

Item	Description
Color	Click the color swatch to display a color picker that you can use to change the color and transparency used to draw the strikethrough line.
Thickness	Drag the slider to adjust the width of the strikethrough line.
Underline	Select the checkbox if you want to draw a line below the selected characters. Click the ▶ button to choose an underline color and line thickness, or click the ▼ button to hide the controls.
Color	Click the color swatch to display a color picker that you can use to change the color and transparency used to draw the underline.
Thickness	Drag the slider to adjust the width of the underline.

OpenType controls

If you're using an OpenType font, you can use the controls on the OpenType tab to adjust settings for the font. Adjusting these settings has no effect when using non-OpenType fonts.

For more information about OpenType fonts, please refer to OpenType Font Features on the MSDN site.

> **EXAMPLE** For a sample OpenType font pack, please click here.

Editing Word and Character Properties

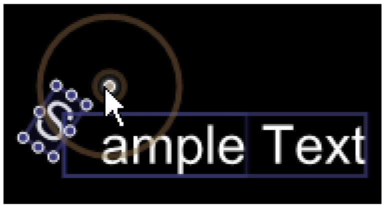
When you select a word or character in the workspace, you can use the Properties pane to edit settings for the each word or character independently of the text block.

Start by clicking a text block to select it. Then you can click the NAVIGATE TO CHILD ⤵, NAVIGATE TO PREVIOUS PEER ⬅, and NAVIGATE TO NEXT PEER ➡ buttons in the main toolbar to select individual words or characters.

The Transform page controls the position and size of the selected word or character: you can change the center or rotation of the word or character, offset its position, adjust its horizontal or vertical scaling, or apply a horizontal or vertical slant (shear).

The Effects page controls the look of your word or character: you can change the opacity of the text, apply a gradient fill, or apply blur, drop shadow, or glow effects.

Transform controls

Item	Description
Center	Each character has a center point that is used for alignment and rotation:  Choose a setting from the drop-down list to indicate how you want to align a character relative to the center point.
Rotation	If you want to rotate a character about its center point, drag the slider, or double-click the slider handle to reset the rotation to zero.
Offset	To move a character from its original position, drag the **X** and **Y** sliders or double-click the label and type a new value in the box.
Scale	To resize a character, drag the **X** and **Y** sliders or double-click the label and type a new value in the box. **TIP** You can also drag the handles on the character to resize it.
Shear	To slant or skew a character, drag the **X** and **Y** sliders or double-click the label and type a new value in the box.

Effects controls

Item	Description
Opacity	Drag the slider to adjust the opacity/transparency of the selected character.
Gradient fill	Select this checkbox if you want to apply a gradient to the selected character. You can use the gradient bar below the checkbox to choose the range of the gradient and the colors used. Drag the points in or out to change the starting and ending point of the gradient. To change the gradient colors, click the points to display a color picker. Click the **Apply Favorite** button ⊞ to display the Gradients menu where you can preview and apply gradient presets. Click a preset name to see an example of the gradient at the bottom of the Gradients menu. Double-click a preset to apply its settings.
Gaussian Blur	If you want to apply a blur to the selected character, select this check box. To adjust the blur, click the ▶ button to use the **Horizontal blur** and **Vertical blur** sliders. Click the **Apply Favorite** button ⊞ to display the Filters menu where you can preview and apply effect presets. Click a preset name to see an example of the effect at the bottom of the Filters menu. Double-click a preset to apply its settings.

Item	Description
Glow	If you want to apply a glow to the selected character, select this check box. To adjust the position and appearance of the glow, click the ▶ button to use the **Glow amount** and **Glow color** controls. Click the **Apply Favorite** button ⊞ to display the Filters menu where you can preview and apply effect presets. Click a preset name to see an example of the effect at the bottom of the Filters menu. Double-click a preset to apply its settings.
Drop Shadow	If you want to apply a drop shadow to the selected character, select this check box. To adjust the position and appearance of the shadow, click the ▶ button to use the **Blur amount**, **Horizontal offset**, **Vertical offset**, and **Shadow color** controls. **TIP** Using a white or custom-color background is useful when adjusting drop-shadow colors. You can use the Preview Properties controls to adjust the color of the workspace background. Click the **Apply Favorite** button ⊞ to display the Filters menu where you can preview and apply effect presets. Click a preset name to see an example of the effect at the bottom of the Filters menu. Double-click a preset to apply its settings.

Editing Text Block Properties

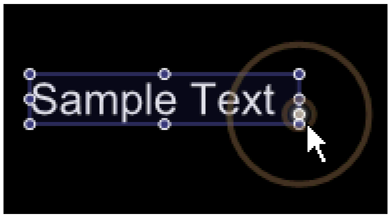
When you select a text block in the workspace, you can use the Properties pane to edit settings for the text block.

The Transform page controls the position and size of the text block: you can change the center or rotation of the text block, offset its position, adjust its horizontal or vertical scaling, or apply a horizontal or vertical slant (shear).

The Effects page controls the look of your text: you can change the opacity of the text, apply a gradient fill, or apply blur, drop shadow, or glow effects.

The Layout page controls the layout of text within the text block: you can adjust spacing, selection, or create a path for your text to follow.

Transform controls

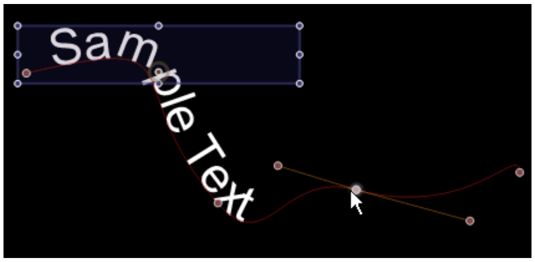
Item	Description
Center	Each text block has a center point that is used for alignment and rotation:  Choose a setting from the drop-down list to indicate how you want to align your text block relative to the center point.
Rotation	If you want to rotate your text block about its center point, drag the slider, or double-click the slider handle to reset the rotation to zero.
Offset	To move a text block from its original position, drag the **X** and **Y** sliders or double-click the label and type a new value in the box.
Scale	To resize a text block, drag the **X** and **Y** sliders or double-click the label and type a new value in the box. **TIP** You can also drag the handles on the text block to resize it.
Shear	To slant or skew a text block, drag the **X** and **Y** sliders or double-click the label and type a new value in the box.

Effects controls

Item	Description
Opacity	Drag the slider to adjust the opacity/transparency of the selected text block.
Gradient fill	Select this checkbox if you want to apply a gradient to the selected text. You can use the gradient bar below the checkbox to choose the range of the gradient and the colors used. Drag the points in or out to change the starting and ending point of the gradient. To change the gradient colors, click the points to display a color picker. Click the **Apply Favorite** button ⊞ to display the Gradients menu where you can preview and apply gradient presets. Click a preset name to see an example of the gradient at the bottom of the Gradients menu. Double-click a preset to apply its settings.
Gaussian Blur	If you want to apply a blur to your text, select this check box. To adjust the blur, click the ▶ button to use the **Horizontal blur** and **Vertical blur** sliders. Click the **Apply Favorite** button ⊞ to display the Filters menu where you can preview and apply effect presets. Click a preset name to see an example of the effect at the bottom of the Filters menu. Double-click a preset to apply its settings.

Item	Description
Glow	If you want to apply a glow to your text, select this check box. To adjust the position and appearance of the glow, click the ▶ button to use the **Glow amount** and **Glow color** controls. Click the **Apply Favorite** button ⊞ to display the Filters menu where you can preview and apply effect presets. Click a preset name to see an example of the effect at the bottom of the Filters menu. Double-click a preset to apply its settings.
Drop Shadow	If you want to apply a drop shadow to your text, select this check box. To adjust the position and appearance of the shadow, click the ▶ button to use the **Blur amount**, **Horizontal offset, Vertical offset,** and **Shadow color** controls. **TIP** Using a white or custom-color background is useful when adjusting drop-shadow colors. You can use the Preview Properties controls to adjust the color of the workspace background. Click the **Apply Favorite** button ⊞ to display the Filters menu where you can preview and apply effect presets. Click a preset name to see an example of the effect at the bottom of the Filters menu. Double-click a preset to apply its settings.

Layout controls

Item	Description
Vertical orientation	Select or clear this checkbox to switch a text block between horizontal and vertical orientation.
Tracking	Drag this slider to increase or decrease the spacing between characters.
Line spacing	When you have multiline text blocks, drag this slider to increase or decrease the space between lines.
Selection	If you want to restrict your edits to a portion of a text block, you can drag either end of the selection bar to adjust the selection length, or drag the selection bar to move the selection within the text block.
Selection type	If you're using the **Selection** control to apply edits to a portion of a text block, choose a setting from the **Selection type** drop-down list to indicate whether you want to select lines of text, words, or characters.
Fade selection	Select this checkbox if you want to feather the edges of the selection, or clear the checkbox if you want to create a hard-edged selection.
Path	Select this checkbox if you want to draw a path for your text to follow. When the checkbox is selected, a path is added to the workspace. You can edit the curve in the same way you create Bezier curves: 
Position on path	When the **Path** checkbox is selected, you can drag this slider to move your text left or right along the path you create.

Item	Description
Wrap around	Select this checkbox if you want text to wrap around your path. For example, if you automate the **Position on path** setting, you can create a repeating, scrolling marquee.

Editing Preview Properties

When you click an area of the workspace that does not contain text, you can use the Properties pane to edit settings for the color of the workspace background and adjust safe areas.

Background

Item	Description
Background	Click the label and choose a setting from the drop-down list to choose whether you want to display the workspace in black, white, or a custom color. **NOTE** Note that the background color is not rendered with your text. The background simply allows you to see your text clearly. **EXAMPLE** A white or custom-color background is useful when creating dark text or adjusting drop-shadows on text blocks or characters. Similarly, a dark background is useful when working with light-colored text.
Custom color	When you choose **Custom** from the **Background** drop-down list, you can click the color swatch to display a color picker you can use to set the color of the workspace background.

Safe area

Drag the slider to adjust the size of the safe area guides in the workspace.

Editing Default Text Properties

When you click an area of the workspace that does not contain text, you can use the Properties pane to set the default font family and size that will be used when you add text blocks.

> **TIP** If you want to edit properties for existing text, double-click the text block to enter Text Edit mode, and then use the Properties pane to edit the properties for the selected text.

1. Click an area of the workspace that does not contain text (if you're in Text Edit mode, press Esc).
2. Click the Defaults tab in the Preview Properties pane.
3. Click the FONT FAMILY control and choose a font from the drop-down list.
4. Drag the FONT SIZE slider to adjust default text size.

ProType Titler Tips and Techniques

The following topics will show you how to create several types of titles with the ProType Titler.

Creating Scrolling Credits

The ProType Titler is incredibly powerful and flexible, but this help topic will show you how to quickly create a vertically scrolling credit roll.

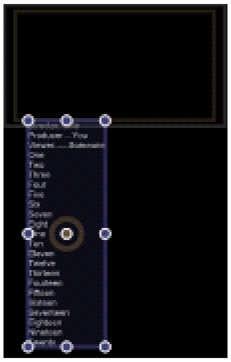
1. Add the ProType Titler to a track.
2. Double-click the workspace to add a text block.
3. Type your text or credits, placing one name per line.

   > **TIP** You can also paste text from your clipboard. Plain text is added when you paste; fonts and styles are not supported.

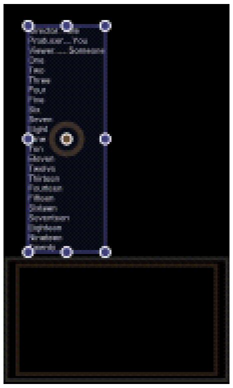
4. Press Esc to exit text-edit mode. You can use the properties pane to edit text properties, character properties, and text block properties to refine the appearance of your credit roll.

> **TIP** A credit roll will create a text block that's much taller than your workspace. Use the magnification and view toolbar to change the magnification level of the workspace.

5. In the automation controller/timeline, click to position the cursor at the beginning of the timeline.
6. Drag your text block to the bottom of the frame in the workspace.



7. Click the Transform tab in the Text Block Properties pane.
8. Select the TOGGLE AUTOMATION button next to the OFFSET Y control.
9. In the automation controller/timeline, click to position the cursor at the end of the timeline.
10. Drag the OFFSET Y slider (or drag the text block in the workspace) to move the text block to the top of the frame. A keyframe is created.



11. You can use the preview toolbar to preview your credit roll.

Creating a Crawling Title

This help topic will show you how to quickly create text that scrolls from right to left across the screen.

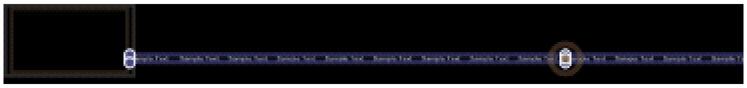
1. Add the ProType Titler to a track.
2. Double-click the workspace to add a text block.
3. Type your text or credits, placing all your text on one line.

   > **TIP** You can also paste text from your clipboard. Plain text is added when you paste; fonts and styles are not supported.

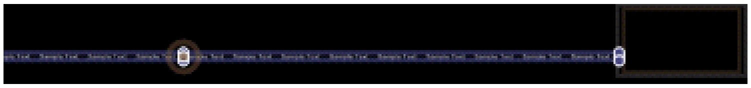
4. Press Esc to exit text-edit mode. You can use the properties pane to edit text properties, character properties, and text block properties to refine the appearance of your crawler.

   > **TIP** A crawling title will create a text block that's much wider than your workspace. Use the magnification and view toolbar to change the magnification level of the workspace.

5. In the automation controller/timeline, click to position the cursor at the beginning of the timeline.
6. Drag your text block to the right edge of the frame in the workspace.



7. Click the Transform tab in the Text Block Properties pane.
8. Select the TOGGLE AUTOMATION button next to the OFFSET X control.
9. In the automation controller/timeline, click to position the cursor at the end of the timeline.
10. Drag the OFFSET X slider (or drag the text block in the workspace) to move the text block to the left side of the frame. A keyframe is created.



11. You can use the [preview toolbar](#) to preview your crawling title.

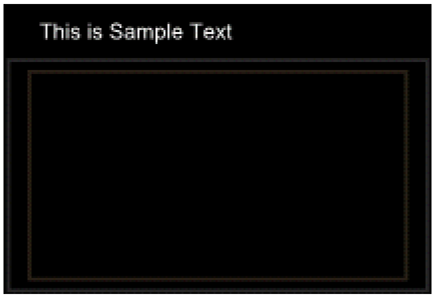
Animating Text with Cascading Keyframes

Cascading keyframes simplify animation by allowing you to animate a character, word, or line of text and then apply those keyframe settings to sibling items in the text block.

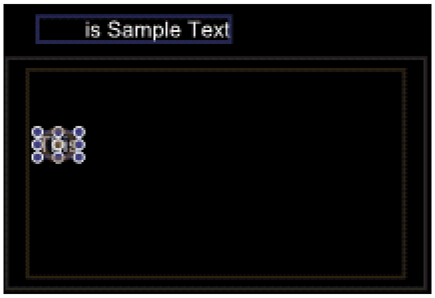
For this example, let's create a text block that says "This is sample text" and have each word drop in from the top of the frame.

1. Add the ProType Titler to a track.
2. Double-click the workspace to add a text block.
3. Type "This is sample text."
4. Press Esc to exit text-edit mode.

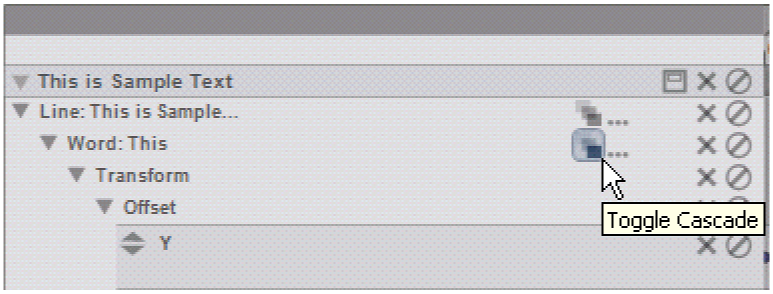
4. Drag the text block so it's above the video frame.



5. With the text block selected, click NAVIGATE TO CHILD to select the word "This."
6. Click the Transform tab in the Text Block Properties pane.
7. Select the TOGGLE AUTOMATION button next to the Y Offset control.
8. In the automation controller/timeline, click to position the cursor near the 3-second mark.
9. Drag the Y Offset slider (or drag the selected word "This" in the workspace) to move the word into the frame. A keyframe is created.



10. In the automation controller/timeline, select the TOGGLE CASCADE button in the keyframe row "Word: This".



This is Sample Text

Line: This is Sample...

Word: This

Transform

Offset

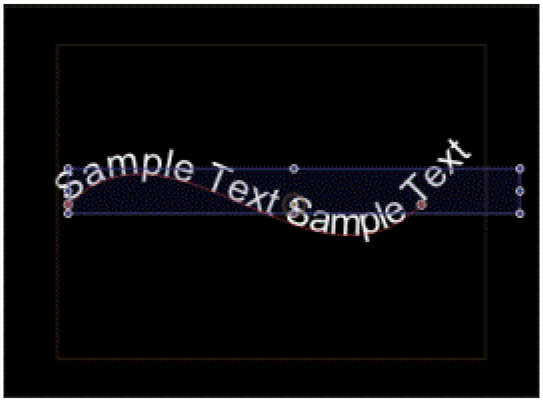
Y

11. You can use the preview toolbar to preview your animated text.

Placing Text Along a Curve

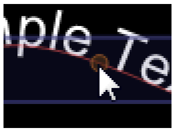
This help topic will show you how to create text that follows a curve.

1. Add the ProType Titler to a track.
2. Double-click the workspace to add a text block.
3. Type your text.
4. Press Esc to exit text-edit mode. You can use the properties pane to edit text properties, character properties, and text block properties to refine the appearance of your credit roll.
5. Click the Layout tab in the Text Block Properties pane.
6. Select the PATH check box. A simple curve is applied to your text:

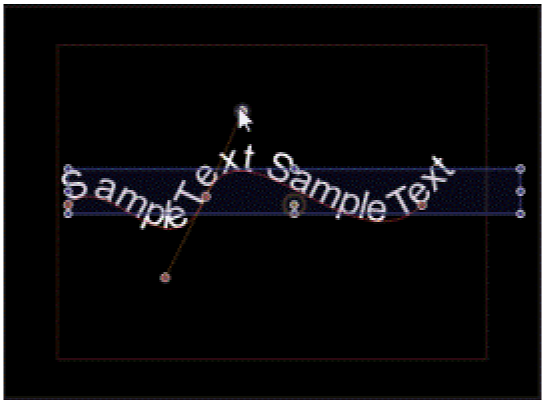


7. If you want to modify the curve, you can add or remove points or change the curve at each envelope point.

- Double-click the curve to add a new point:



- Drag a point to change its position on the curve.
- Drag the handles on either side of a control point to change the curve:



- To delete a control point, right-click it and choose DELETE from the shortcut menu.

8. If you want to change the position of the text on the curve, you can drag the POSITION ON PATH slider. If you want to animate the text along the path, you can select the TOGGLE AUTOMATION button next to the POSITION ON PATH slider and use the Automation Controller to add keyframes.

Using Vegas Pro Connect

Collaboration on video productions

Vegas Pro Connect makes it easier for you to edit and collaborate on VEGAS Pro projects.

When you're working with VEGAS Pro, you can use Vegas Pro Connect to remotely control the Vegas transport functions, seek and scrub the timeline, and add markers.

When you're on the go, you can use Vegas Pro Connect to bring your projects with you for review on your iPad.

NOTE
This feature is no longer supported and may be removed from the application in a future version.

To use this feature, click OPTIONS | PREFERENCES to open the dialog.

In the DEPRECATED FEATURES tab, select the checkbox.

Using VEGAS Pro Connect to review projects on your iPad

Who says you can't take it with you? Choose FILE | PREPARE FOR VEGAS PRO CONNECT to prepare the current project to be synchronized with your iPad.

A prepared project is a representation of your project at the specific point when you prepared it. VEGAS Pro renders a file that contains your current edits and adds it to a list of projects that you can choose to synchronize when Vegas Pro Connect is connected. After you sync, you can view your project on your device and add markers that will be synchronized with your VEGAS Pro project the next time you connect.

Preparing projects for Vegas Pro Connect

When you prepare a project, VEGAS Pro renders a file that can be played on your iPad, creates a thumbnail image, and prepares metadata — such as markers — to be displayed on your device.

Each time you make changes to a project, you'll need to prepare it so Vegas Pro Connect can determine whether the project needs to be synchronized.

1. Choose FILE | PREPARE FOR VEGAS PRO CONNECT.

   The VEGAS PRO CONNECT FILES LOCATION box displays the path to the folder that will be used for the files that will be synchronized with your iPad.
2. Select the PREPARE METADATA ONLY checkbox if you want to prepare only metadata. This method allows you to update markers quickly without rendering or transferring the media file.

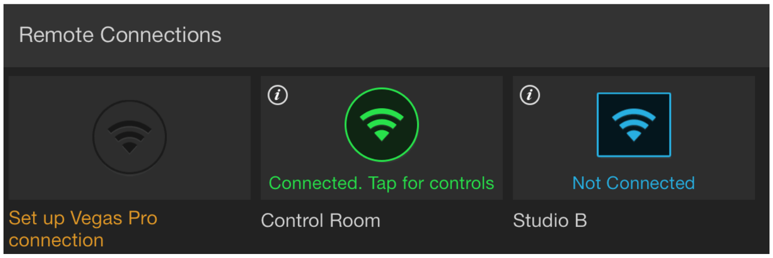
3. Select a radio button to choose the portion of your project that you want to prepare.
    - Select the PREPARE ENTIRE PROJECT radio button if you want to save the full project timeline.
    - Select the PREPARE LOOP REGION ONLY radio button if you want to save only the portion of the project that is contained within the loop region. LOOP PLAYBACK does not need to be selected for this option to work.
    - The PREPARE LOOP REGION ONLY radio button is available only if you've created a time selection in the timeline.

      > **TIP** When PREPARE LOOP REGION ONLY is selected, VEGAS Pro will render only the frames contained within the loop region. If you change your selection and prepare the project again, the Review Projects section of Vegas Pro Connect will contain a separate entry for each selection range.

    - Select the PREPARE PREVIOUS LOOP REGION radio button and choose a setting from the drop-down list to save a portion of the project that you've previously prepared. LOOP PLAYBACK does not need to be selected for this option to work.
4. Click OK to start rendering your project and add it to the Review Projects queue on your iPad.

Transferring projects to your iPad

1. On your iPad, tap the connection you want to use. After you connect, your queued project will be transferred to your device and displayed in the Review Projects list.

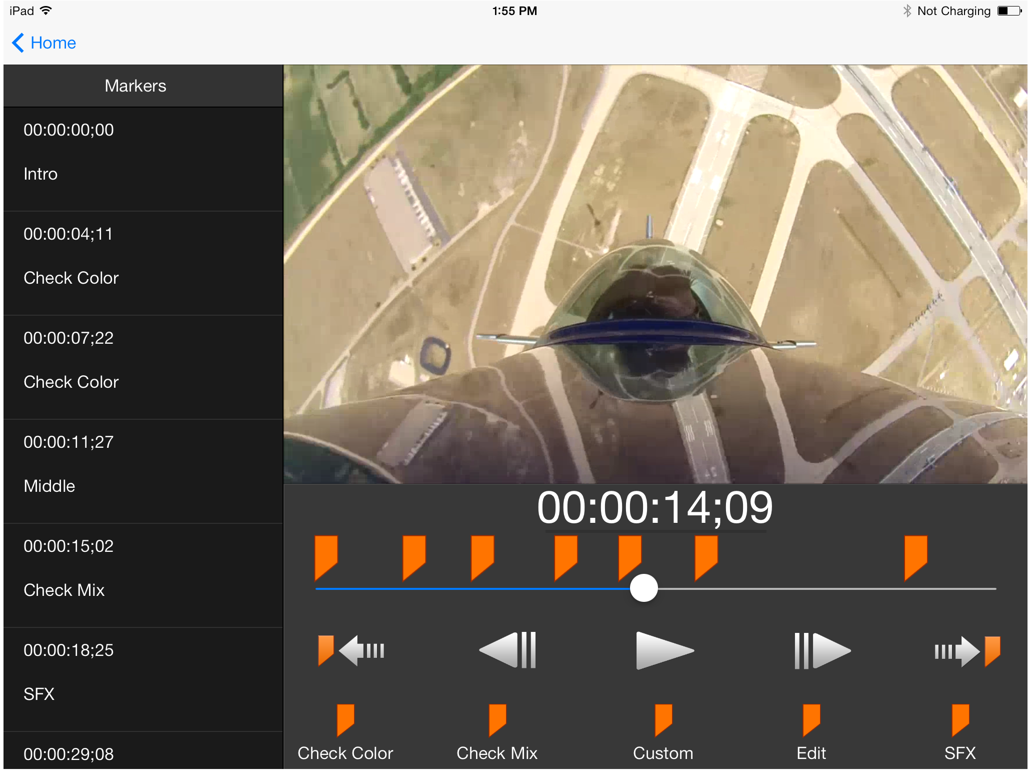


2. The Review Projects list at the bottom of Vegas Pro Connect displays a list of projects that are available for mobile review.
    - If a file has not been synchronized with your iPad, TAP TO SYNC FILE is displayed, Tap the file's thumbnail image to synchronize it.
    - If a file has been synchronized, a check mark ✓ is displayed in the file's thumbnail image.
    - If a file has been updated since it was synchronized, a resync icon ↻ is displayed in the file's thumbnail image. Tap TAP TO RESYNC to transfer the latest version to your iPad.
    - Tap REMOVE FILE ⊗ to remove a file from your iPad.
    - Tap a synchronized project's thumbnail image to start playback.

Reviewing projects on your iPad

Tap a synchronized project's thumbnail image to start playback.

Tap the buttons in Vegas Pro Connect to undo/redo edits, control playback, or add markers to the VEGAS Pro timeline.


iPad
1:55 PM
Not Charging
Home
Markers
00:00:14;09
Check Color
Check Mix
Custom
Edit
SFX

00:00:00;00
Intro
00:00:04;11
Check Color
00:00:07;22
Check Color
00:00:11;27
Middle
00:00:15;02
Check Mix
00:00:18;25
SFX
00:00:29;08

The Markers list displays all markers in your project. Markers that were added in Vegas Pro Connect include a DELETE button ⊗ that you can tap to remove the marker.

Markers that were added in VEGAS Pro cannot be deleted in Vegas Pro Connect.

Item	Description
Timecode	Displays the timecode value at the cursor position.
Trackbar	Represents the length of your project. Drag the handle to move the cursor forward or backward in your project.
Previous Marker	Tap PREVIOUS MARKER ◀ to move the cursor to the previous marker.
Previous Frame	Tap PREVIOUS FRAME ◀ to move the cursor to the previous frame.
Play	Tap PLAY ▶ to start playback from the cursor position.
Next Frame	Tap NEXT FRAME ▶ to move the cursor to the next frame.
Next Marker	Tap NEXT MARKER ▶ to move the cursor to the next marker.

Item	Description
Markers	Tap a marker type to add a marker at the current cursor position. CUSTOM: Adds a marker and prompts you to type a custom label. CHECK COLOR: Adds a marker labeled "Check Color." CHECK MIX: Adds a marker labeled "Check Mix." SFX: Adds a marker labeled "SFX." EDIT: Adds a marker labeled "Edit." **NOTE** Markers that you add in Vegas Pro Connect will be displayed in blue until you sync your project. When Vegas Pro Connect is connected ( ), you can tap HOME to sync the markers on your device with your VEGAS Pro project. If you're reviewing your project on the go, your markers will be synced the next time you start Vegas Pro while Vegas Pro Connect is connected.

Managing prepared clips

Choose FILE | MANAGE VEGAS PRO CONNECT CLIPS to display the Manage Vegas Pro Connect Clips dialog.

This dialog displays each of the clips that you've prepared for Vegas Pro Connect. You can see the clip's thumbnail image, the portion of the project that was prepared, and the last time the clip was prepared.

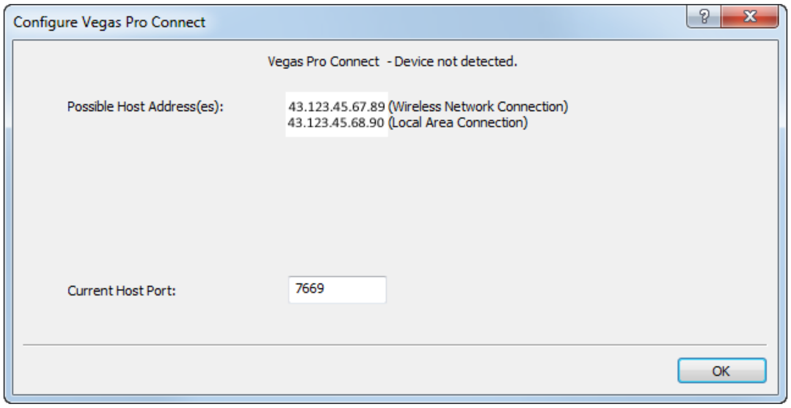
Click DELETE ALL CLIPS or DELETE SELECTED CLIPS to remove previously prepared Vegas Pro Connect clips from your computer.

Setting up VEGAS Pro Connect

Vegas Pro Connect saves connection profiles that allow you to use the app with a number of computers running VEGAS Pro.

1. Enable the Vegas Pro Connect host on each computer you want to connect to.
   a. In VEGAS Pro, verify OPTIONS | EXTERNAL CONTROL is enabled.
   b. In VEGAS Pro, choose OPTIONS | PREFERENCES and select the External Control & Automation tab.
   c. Choose VEGAS PRO CONNECT from the AVAILABLE DEVICES drop-down list and click the ADD button.
   d. Double-click the VEGAS PRO CONNECT entry in the Active control devices list.
   e. The Configure Vegas Pro Connect dialog displays a list of possible addresses for your computer and the port that will be used to communicate with your computer.

      Record the host addresses and port number. You'll need them when you set up Vegas Pro Connect.



Vegas Pro Connect - Device not detected.

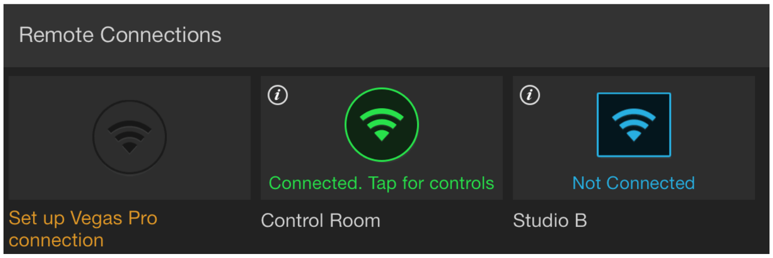
Possible Host Address(es): 43.123.45.67.89 (Wireless Network Connection)
43.123.45.68.90 (Local Area Connection)

Current Host Port: 7669

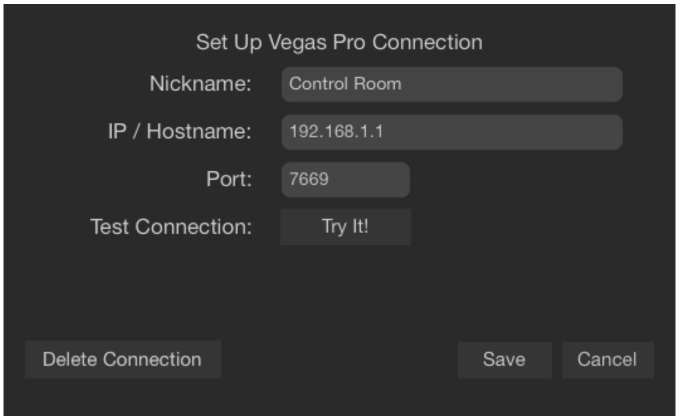
> **IMPORTANT** Your iPad and the computer running VEGAS Pro must be connected to the same network.

   f. Click OK to close the Configure Vegas Pro Connect and Preferences dialogs.

2. Set up a connection in Vegas Pro Connect:
   a. Start Vegas Pro Connect on your iPad.
   b. Tap SET UP VEGAS PRO CONNECTION to create a new connection, or tap ⓘ to edit an existing connection.


Remote Connections
ⓘ
ⓘ
Connected. Tap for controls
Not Connected
Set up Vegas Pro connection
Control Room
Studio B

   c. Use the Set Up VEGAS Pro Connection settings to name your connection and specify the address and port of the computer you noted in step 1e above.



Set Up Vegas Pro Connection
Nickname: Control Room
IP / Hostname: 192.168.1.1
Port: 7669
Test Connection: Try It!

Delete Connection
Save
Cancel

   d. Tap TRY IT! to test the connection.

      If the connection is successful, SUCCESS is displayed.

      If the connection fails, you may need to adjust your network or connection settings.
   e. Tap SAVE.

Stabilizing video clips (legacy plug-in)

> **NOTE** This is the old stabilization plugin help. The plug-in stays in the software to keep compatibility with projects created in older versions of VEGAS Pro. We recommend you to use the new improved VIDEO STABILIZATION plugin

> **NOTE**
> This feature is no longer supported and may be removed from the application in a future version.
>
> To use this feature, click OPTIONS | PREFERENCES to open the dialog.
>
> In the DEPRECATED FEATURES tab, select the checkbox.

You can apply the STABILIZE plug-in to analyze and remove camera shake from video.

1. In the Project Media window, select the video you want to stabilize.

   > **TIP** If you're using only a portion of a longer media file, you can use the Trimmer window to create a subclip that contains only the portion of the media that is used in your project. Stabilizing subclip requires less processing than stabilizing a full media file. For more information, see Using the Trimmer

2. From the Tools menu, choose VIDEO, and then choose MEDIA FX (or right-click a media file in the Project Media window and choose MEDIA FX from the shortcut menu). The Plug-In Chooser is displayed.
3. In the Plug-In Chooser, select the Stabilize plug-in and click the ADD button. The Media FX dialog displays the Stabilize plug-in.
4. Choose a setting from the PRESET drop-down or adjust the controls in the dialog

as needed:

Item	Description
Pan smoothing	Drag this slider to adjust the amount of shake (left/right and up/down motion) detection. In most cases, the preset's default setting will provide a good balance of accuracy and processing power. Increasing the setting can produce more accurate stabilization if needed.
Stabilization amount	Drag this slider to adjust the amount of tilt and zoom detection. In most cases, the preset's default setting will provide a good balance of accuracy and processing power. Increasing the setting can produce more accurate stabilization if needed.
Rolling shutter correction	Select this checkbox if you want to correct skewing (during horizontal motion) or stretching/compression (during vertical motion) due to rolling shutter.

5. Click APPLY. The video is analyzed, and stabilization is applied to your media.

> **TIP** To remove stabilization, right-click an media file in the Project Media and choose MEDIA FX from the shortcut menu to display the Media FX dialog. You can then bypass the Stabilize plug-in or remove it from the media's effects chain.

Text

> **NOTE** This is the legacy Text generator, that is hidden by default in VEGAS and is only shown when loading older projects that are using it. If you want to use it for new projects (we don't recommend this) you can make it visible in the Preferences | Deprecated Features tab.

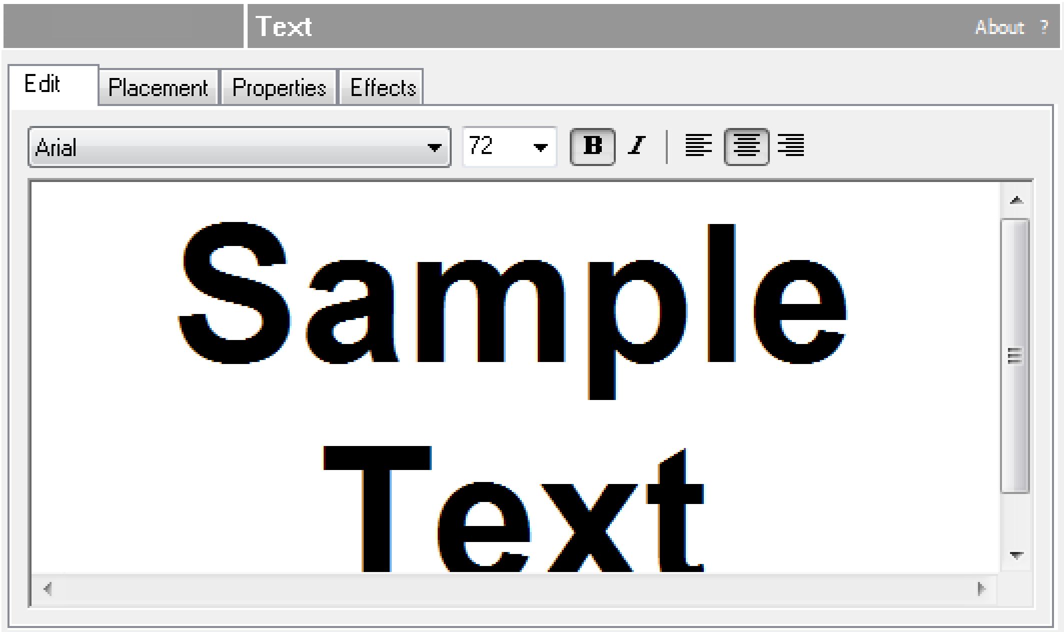
Use the Text generator to add text, such as titles or credits, to your existing video.

The Text generator is divided into four tabs: enter the text you want to display on the Edit tab, and use the Placement, Properties, and Effects tabs to adjust the appearance of the text.

> **TIP** To display text over a video event, place the generated media event on a track above the video.

The Edit tab

Use the Edit tab to enter the text you want to display. The controls on this tab work just like a word processor: type in the main portion of the tab, and use the controls at the top to adjust the font, font size, bold/italic, and alignment properties for the text.

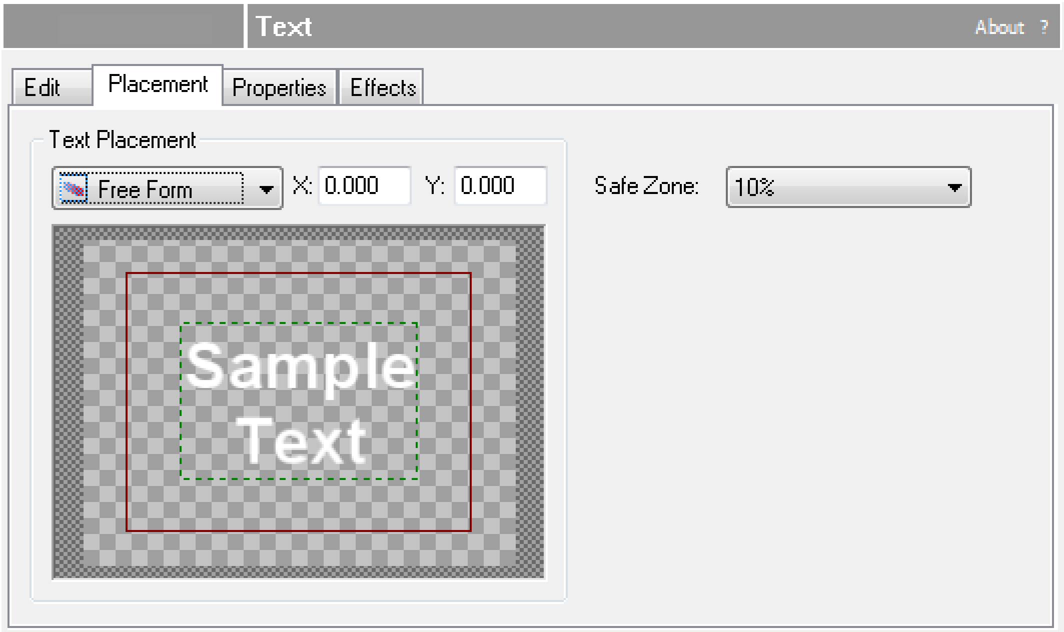

Text
About ?
Edit
Placement
Properties
Effects
Arial
72
B
I
Sample Text

The Placement tab

Use the Placement tab to specify where your text will be displayed in the video frame.

You can choose a placement from the drop-down list, enter X,Y coordinates to specify the center of the text, or drag the text box to determine text placement.

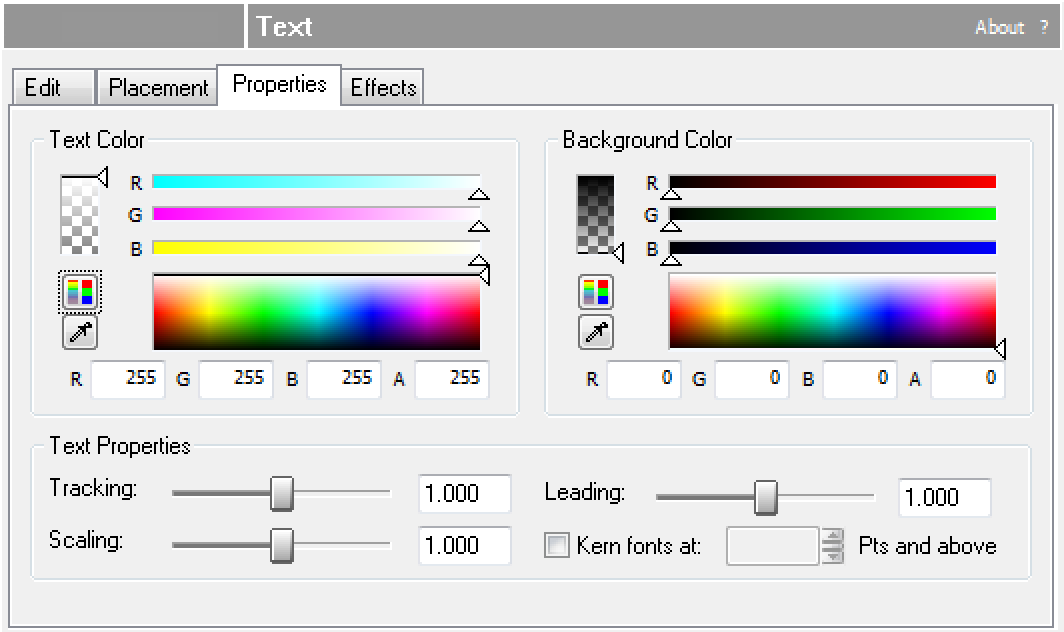
> **TIP** Choose a setting from the SAFE ZONE drop-down list to adjust the size of the red border around your text. You can use the Safe Zone to ensure your text will not be cropped on a television screen.


Text
About ?
Edit
Placement
Properties
Effects
Text Placement
Sample Text

Free Form
X: 0.000
Y: 0.000
Safe Zone: 10%

The Properties tab

Use the Properties tab to specify the color of your text, the color of the text background, and the spacing between characters and lines.

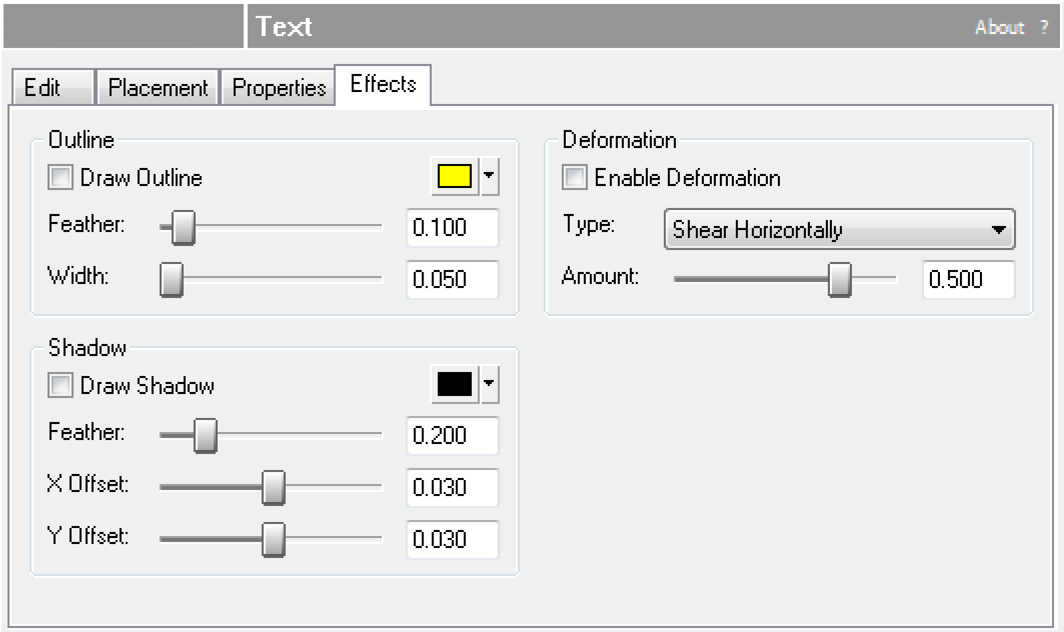

Text
About ?
Edit
Placement
Properties
Effects
Text Color
R
G
B
Background Color
R
G
B
Text Properties

Text Color: R 255 G 255 B 255 A 255
Background Color: R 0 G 0 B 0 A 0
Tracking: 1.000
Leading: 1.000
Scaling: 1.000
☐ Kern fonts at: Pts and above

Item	Description
Text Color	Use the color sliders or enter RGB values to choose the color of your text.
Background Color	Click to choose the color of the background. If you choose a solid color, the video below your text will be obscured. If you choose a transparent color, your text will be displayed over the video.
Tracking	Determines the amount space between text characters.
Scaling	Drag to scale your text. A setting of 1.0 will use the size specified on the Edit tab.
Leading	Determines the amount of space between lines of text.
Kern fonts at	Select this checkbox to automatically adjust the spacing between characters.

The Effects tab

Use the Effects tab to apply special effects such as outlines, shadows, and deformation to your text.


Text
About ?
Edit
Placement
Properties
Effects

Outline

☐ Draw Outline

Feather: 0.100

Width: 0.050

Shadow

☐ Draw Shadow

Feather: 0.200

X Offset: 0.030

Y Offset: 0.030

Deformation

☐ Enable Deformation

Type: Shear Horizontally

Amount: 0.500

Item	Description
Draw Outline	Select this checkbox and choose a color form the drop-down list if you want to add a colored outline to your text.
Feather	Drag the slider to determine how smoothly the text outline blends in the background.
Width	Drag the slider to specify the width of the outline.
Draw Shadow	Select this checkbox and choose a color form the drop-down list if you want to add a colored shadow behind your text.
Feather	Drag the slider to determine how smoothly the text outline blends in the background.
X Offset	Drag the slider if you want to offset the shadow from the horizontal center of your text.
Y Offset	Drag the slider if you want to offset the shadow from the vertical center of your text.
Enable Deformation	Select the checkbox if you want to apply deformation to your text.
Type	Choose a deformation type from the drop-down list.
Amount	Drag the slider to set the degree of deformation.

Appendix

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Specifications

System requirements

Operating systems	Microsoft Windows 11
Internet connection	required for registering and validating the program, as well as for some program functions.

Recommended for HD

CPU	8th Generation Intel Core i5 (or AMD equivalent) or better with 2.5 Ghz and 4 Cores
RAM	16 GB
Hard drive space	2 GB free disk space for program installation
GPU	● NVIDIA® GeForce RTX or GTX 10XX series or higher with 8GB ● AMD® Radeon with 8GB or higher ● Intel® GPU HD Graphics 630 series or higher

Recommended for 4K

CPU	12th Generation Intel Core i7 (or AMD equivalent) or better with 3.0 Ghz and 8 Cores
RAM	32 GB
Hard drive space	2 GB space for program installation, solid-state disk (SSD) for media files
GPU	● NVIDIA® GeForce RTX or GTX 30XX series or higher with 8GB (12GB recommended for 8K) ● AMD® Radeon 5xxx with 8GB or higher ● Intel® UHD Graphics 770 series or higher

Recommended for AI Features

CPU	14th Generation Intel CPU i9 (or AMD equivalent) or newer
GPU	● NVIDIA® 40xx GeForce RTX series or higher ● AMD® Radeon RX 6xxx or higher ● 16GB of VRAM or higher

Proxy workflow can be used to expedite 4K & 8K editing on all machines with recommended specs for HD.

Supported file formats

Import formats

Video	Apple ProRes, Blackmagic RAW, HEVC/H.265, AVC/H.264, MP4, MPEG-2, MPEG-1, AVI, WMV, M4V, Sony XAVC / XAVC-S / XDCAM EX / HD 422 / MXF / ProDisc / HDCAM SR, MPEG IMX, DV, HDV, AVCHD, Panasonic P2, RED RAW
Audio	AIFF, AAC, MP2, MP3, M4A, OGG Vorbis, WAV, WMA, FLAC
Image	BMP, GIF, PNG, JPG, TIFF, DPX, OpenEXR, WDP, DNG
Other	Premiere/After Effects (*.prproj), Final Cut Pro 7/ DaVinci Resolve (*.xml), Final Cut Pro X (*.fcpxml), EDL Text File (*.txt), Broadcast Wave Format, Closed Captioning (SRT)
Resolutions	SD, HD, 4K, 8K

Export formats

Video	Apple ProRes, HEVC/H.265, AVC/H.264, MPEG-2, MPEG-1, MP4, AVI, WMV, Sony XAVC / XAVC-S / MXF / HDCAM SR, Panasonic P2, XDCAM EX
Audio	AIFF, AAC, MP3, OGG Vorbis, WAV, WMA, FLAC
Image	BMP, PNG, JPG, TIFF, DPX, OpenEXR
Other	VEGAS Project Archive (*.veg, *.vf), Premiere/After Effects (*.prproj), Final Cut Pro 7/DaVinci Resolve (*.xml), Final Cut Pro X (*.fcpxml), EDL Text File (*.txt), XDCAM Disc
Resolutions	SD, HD, 4K, 8K

Video Codec Overview

This document provides an overview of the video codecs supported by VEGAS Pro, detailing the formats and hardware acceleration capabilities available.

The following table outlines the video formats supported by VEGAS, including compatibility with various hardware decoders and fallback options.

TIP
Ensure your hardware is compatible with the required decoding capabilities to maximize performance and quality.

FURTHER INFORMATION

- https://www.intel.com/content/www/us/en/docs/onevpl/developer-reference-media-intel-hardware/1-1/overview.html
- https://docs.nvidia.com/video-technologies/video-codec-sdk/12.2/nvdec-video-decoder-api-prog-guide/index.html#overview
- https://docs.nvidia.com/video-technologies/video-codec-sdk/12.2/nvenc-application-note/index.html#nvidia-hardware-video-encoder

Video Decoder Capabilities

H.264 / AVC Decoder Support

Format	NVDec	AMF	Intel HW	Fallback
4:2:0 8bit	✓ (up to 4K)[1]	✓ (up to 4K)[1]	✓ (up to 4K)[1]	✓
4:2:0 10bit	×	×	×	✓
4:2:2 8bit	×	×	×	✓
4:2:2 10bit	×	×	×	✓
4:4:4 8bit	×	×	×	✓
4:4:4 10bit	×	×	×	✓

[1] While AVC itself supports 8k resolution, HW decoding is limited to 4K.

H.265 / HEVC Decoder Support

Format	NVDec (GM206 or newer)	AMF	Intel HW	Fallback
4:2:0 8bit	✓	✓ (up to 8k)	✓ (up to 8k)	✓
4:2:0 10bit	✓	✓ (up to 8k)	✓ (up to 8k)	✓
4:2:0 12bit	✓	×	×	✓[2]
4:2:2 8bit (REXT)	×	×	✓[2]	✓[2]
4:2:2 10bit (REXT)	×	×	✓[2]	✓
4:2:2 12bit	×	×	×	✓[2]

[2] Intel Hardware 11th generation or higher needed with iGPU activated (even for SW encoding!)

AV1 Decoder Support

Format	NVDec (GA10x/AD10x or newer)	AMF (RX6xxxx or newer)	Intel oneVPL HW	Fallback DAV1D
4:2:0 8bit	✓	✓	✓[3]	✓
4:2:0 10bit	✓	✓	✓[3]	✓
4:2:0 12bit	×	×	×	✓
4:2:2 8bit	×	×	×	✓
4:2:2 10bit	×	×	×	✓
4:2:2 12bit	×	×	×	✓
4:4:4 8bit	×	×	×	✓
4:4:4 10bit	×	×	×	✓
4:4:4 12bit	×	×	×	✓

[3] Intel Arc or Hardware 11th generation and higher needed

Video Encoder Capabilities

H.264 / AVC Encoder Support

Format	NVEnc	AMF	Intel HW	SW Fallback
4:2:0 8bit	✓ (up to 4K)	✓ (up to 4K)	✓ (up to 4K)	✓
4:2:0 10bit	×	×	×	×
4:2:2 8bit	×	×	×	×
4:2:2 10bit	×	×	×	×
4:4:4 8bit	×	×	×	×
4:4:4 10bit	×	×	×	×

H.265 / HEVC Encoder Support

Format	NVEnc	AMF (RX 5xxx)	AMF (RX 6xxx or newer)	Intel HW	SW Fallback
4:2:0 8bit	✓ (up to 8k)	✓ (up to 4k)	✓ (up to 8k)	✓ (up to 8k)	✓
4:2:0 10bit	✓ (up to 8k)	✓ (up to 4k)	✓ (up to 8k)	✓ (up to 8k)	✓
4:2:0 12bit	×	×	×	×	×
4:2:2 8bit (REXT)	×	×	×	×	×
4:2:2 10bit (REXT)	×	×	×	×	×
4:2:2 12bit	×	×	×	×	×

AV1 Encoder Support

Format	NVEnc (4xxx or newer)	AMF (RX7xxx or newer)	Intel HW (requires Arc)	SW Fall-back SVT	Fallback RAV1E
4:2:0 8bit	✓(upcoming release)	✓(upcoming release)	✓(upcoming release)	✓	✓
4:2:0 10bit	✓(upcoming release)	✓(upcoming release)	✓(upcoming release)	✓	✓
4:2:0 12bit	×	×	×	×	✓
4:2:2 8bit	×	×	×	×	✓
4:2:2 10bit	×	×	×	×	✓
4:2:2 12bit	×	×	×	×	✓
4:4:4 8bit	×	×	×	×	✓
4:4:4 10bit	×	×	×	×	✓
4:4:4 12bit	×	×	×	×	✓

Keyboard shortcuts

The following shortcuts represent the default configuration. Your system may differ if you've used the Customize Keyboard dialog to customize your keyboard shortcuts.
For more information, see Customizing keyboard shortcuts

Project file shortcuts

Command	Keyboard Shortcut
Create new project	Ctrl+N
Create new project and bypass the Project Properties dialog	Ctrl+Shift+N
Exit VEGAS Pro	Alt+F4
Close the current project	Ctrl+F4
Open existing project	Ctrl+O
Project properties	Alt+Enter
Save project	Ctrl+S
Save project as	Ctrl+Shift+S
Save Version (Incremental Save)	Ctrl+Alt+S

Magnification and view

Command	Keyboard Shortcut
Set focus to timeline	Alt+0
Show Explorer window	Alt+1
Show Trimmer window	Alt+2
Show Master Bus window	Alt+3
Show Video Preview window	Alt+4
Show Project Media window	Alt+5
Show Project Notes window	Alt+6
Show Transitions window	Alt+7
Show Video FX window	Alt+8
Show Media Generators window	Alt+9
Show Plug-In Manager window	Ctrl+Alt+1
Show Video Scopes window	Ctrl+Alt+2
Show Surround Panner window	Ctrl+Alt+3
Show Edit Details window	Ctrl+Alt+4
Show Mixing Console window	Ctrl+Alt+5
Show Device Explorer window	Ctrl+Alt+6
Show Loudness Meters window	Ctrl+Alt+7
Show Dashboard	Ctrl+Alt+8
Open Color Grading Mode	Alt+G
Open Motion Tracking Mode	Alt+M
Open Text to Speech	Ctrl+Shift+P
Show/hide audio bus tracks	B

Command	Keyboard Shortcut
Show/hide video bus tracks	Ctrl+Shift+B
Show/hide event media markers	Ctrl+Shift+K
Show/hide active take information	Ctrl+Shift+I
Show/hide waveforms on events in the timeline	Ctrl+Shift+W
Show/hide event buttons	Ctrl+Shift+C
Toggle Event Headers	Ctrl+Alt+M
Show/hide event fade lengths between selected and nonselected events:	Ctrl+Shift+T
Toggles the display of the frame under the cursor or display split-screen previews when you perform one of following edits: event slip, event slip-trim, event slide, or cross-fade/transition slide. For example, when you drag the edge of a video event with this command selected, the Video Preview window will update to draw the last frame in the event as you drag. When the command is not selected, a static frame is displayed.	Ctrl+Shift+O
Show/hide envelopes	Ctrl+Shift+E
Show next window	F6 or Ctrl+Tab
Show previous window	Shift+F6 or Ctrl+Shift+Tab
Recall window layout	Alt+D, then press 0-9
Save window layout	Ctrl+Alt+D, then press 0-9
Load default window layout	Alt+D, then press D

Command	Keyboard Shortcut
Load default layout	Alt+D, then press V
Load audio mixing window layout	Alt+D, then press A
Load color correction window layout	Alt+D, then press C
When both are visible, toggle focus between track list and timeline (and bus track list and timeline if bus tracks are visible)	Tab
Switch focus to previous/next track or bus track	Alt+Shift+Up/Down Arrow
Zoom in/out horizontally in small increments (if timeline has focus)	Up/Down Arrow
Zoom in/out horizontally in large increments or zoom to selection (if one exists)	Ctrl+Up/Down Arrow
Zoom in time until each video thumbnail represents one frame	Alt+Up Arrow
Decrease height of all tracks or bus tracks (depending which has focus)	Ctrl+Shift+Down Arrow
Increase height of all tracks or bus tracks (depending which has focus)	Ctrl+Shift+Up Arrow
Minimize/restore track height	` (grave accent)
Set track heights to default height	Ctrl+`
Minimize/restore the window docking area	F11 or Alt+`
Maximize/restore the timeline vertically and horizontally (window docking area and track list will be hidden)	Ctrl+F11 or Ctrl+Alt+`

Command	Keyboard Shortcut
Minimize/restore the track list	Shift+F11 or Shift+Alt+`
Zoom waveforms in/out vertically (audio only)	Shift+Up/Down Arrow

Cursor placement, loop region, and time selection

Most of the cursor placement commands, when combined with the `Shift` key, also perform selection.

Command	Keyboard Shortcut
Center view around cursor	\
Go to	Ctrl+G
Set end of time selection	Ctrl+Shift+G
Go to beginning of time selection or viewable area (if no time selection)	Home
Go to end of time selection or viewable area (if no time selection)	End
Go to beginning of project	Ctrl+Home or W
Go to end of project	Ctrl+End
Select loop region	Shift+Q
Restore previous five time selections	Backspace
Move left by grid marks	Page Up
Move right by grid marks	Page Down
Move left/right one pixel (when QUANTIZE TO FRAMES is turned off)	Left or Right Arrow
Move to previous/next marker	Ctrl+Left/Right Arrow
Move one frame left/right	Alt+Left or Right Arrow
Move left/right to event edit points (including fade edges)	Ctrl+Alt+Left/Right Arrow
Jog left/right (when not in edge-trimming mode or during playback)	F3/F9
Move edit cursor to playback cursor position during playback	Alt+Down Arrow

Command	Keyboard Shortcut
Move cursor to corresponding marker or select corresponding region	0-9 keys (not numeric keypad)
Move to previous CD track	Ctrl+Comma
Move to next CD track	Ctrl+Period
Move to previous CD index or region	Comma
Move to next CD index or region	Period
Set in and out points	I (in) and O (out)
Create time selection while dragging on an event	Ctrl+Shift+drag with mouse

General editing

Command	Keyboard Shortcut
Cut selection	Ctrl+X or Shift+Delete
Copy selection	Ctrl+C or Ctrl+Insert
Paste from clipboard	Ctrl+V or Shift+Insert
Paste insert	Ctrl+Shift+V
Paste repeat	Ctrl+B
Delete selection	Delete
Trim event to selection	Ctrl+T
Render to new track	Ctrl+M
Create Nested Timeline	Alt+C
Open Nested timeline	Alt+N
Open Parent Timeline	Alt+P
Undo	Ctrl+Z or Alt+Backspace
Redo	Ctrl+Shift+Z or Ctrl+Y
Rebuild audio peaks	Shift+F5
Switch to normal editing tool	Ctrl+D
Switch to next editing tool	D
Switch to previous editing tool	Shift+D
Enable multicamera editing	Ctrl+Shift+D

Event selection and editing

Command	Keyboard Shortcut
Range select	Shift+click events
Multiple select	Ctrl+click individual events
Select all	Ctrl+A
Unselect all	Ctrl+Shift+A
Cut selection	Ctrl+X or Shift+Delete
Copy selection	Ctrl+C or Ctrl+Insert
Paste from clipboard	Ctrl+V or Shift+Insert
Paste insert	Ctrl+Shift+V
Paste repeat	Ctrl+B
Delete selection	Delete
Split events at cursor	S
Smart Split selected event	Alt+S
Rename selected event	F2
Trim/crop selected events	Ctrl+T
Move cursor to edge of previous selected event	Ctrl+[
Trim the start of the selected event to the cursor position	Alt+[
Time select previous selected event	Ctrl+Shift+[
Move cursor to edge of next selected event	Ctrl+]
Trim the end of the selected event to the cursor position	Alt+]
Time select next selected event	Ctrl+Shift+]

Command	Keyboard Shortcut
Move selected events one frame left/right	Numeric Keypad 1/3
Move selected events one pixel left/right	Numeric Keypad 4/6
Enter edge-trimming mode and select event start; move to previous event edge In this mode, 1, 3, 4, and 6 on the numeric keypad trim the selected event edge. Please see below.	Numeric Keypad 7 or [
Enter edge-trimming mode and select event end; move to next event edge	Numeric Keypad 9 or]
Trim left/right (when in edge-trimming mode)	F3/F9
Enter/exit expanded edit mode (or exit edge-trimming mode) You can also double-click an event edge to enter expanded edit mode. In this mode, 1, 3, 4, and 6 on the numeric keypad trim the selected event edge. Please see below.	Numeric Keypad 5
Trim selected events one frame left/right	Numeric Keypad 1/3
Time compress/stretch selected events one frame left/right	Ctrl+Numeric Keypad 1/3
Slip trim selected events one frame left/right	Alt+Numeric Keypad 1/3
L/J trim left/right by frames	Shift+Numeric Keypad 1/3
Slide a transition or crossfade one frame left/right (trim adjacent)	Ctrl+Alt+Numeric Keypad 1/3
L/J cut left/right by frames	Ctrl+Alt+Shift+Numeric Keypad 1/3

Command	Keyboard Shortcut
Trim selected events one pixel left/right	Numeric Keypad 4/6
Time compress/stretch selected events one pixel left/right	Ctrl+Numeric Keypad 4/6
Slip trim selected events one pixel left/right	Alt+Numeric Keypad 4/6
L/J trim left/right by pixels	Shift+Numeric Keypad 4/6
Slide a transition or crossfade one pixel left/right (trim adjacent)	Ctrl+Alt+Numeric Keypad 4/6
L/J cut left/right by pixels	Ctrl+Alt+Shift+Numeric Keypad 4/6
Move selected events up/down one track	Numeric Keypad 8/2
Slip: move media within event without moving the event	Alt+drag inside the event
Slip trim: moves the media with the edge as it is trimmed	Alt+drag edge of event
L/J trim: ignores event grouping so you can trim audio and video events independently.	Shift+drag edge of event
Trim adjacent: trims selected event and adjacent event simultaneously	Ctrl+Alt+drag edge of event
Trim adjacent while ignoring event grouping for fast L and J cuts.	Ctrl+Alt+Shift+drag edge of event
Slip-trim right edge of event	Alt+Shift+drag event
Event split or split/trim	Ctrl+Alt+Shift+click or drag event
Slide: trims both ends of event simultaneously	Ctrl+Alt+drag middle of event
Slide crossfade: moves crossfade	Ctrl+Alt+drag over a crossfade

Command	Keyboard Shortcut
Stretch (compress) the media in the event while trimming	Ctrl+drag edge of event
Raise pitch one semitone	= (not numeric keypad)
Raise pitch one cent	Ctrl+=
Raise pitch one octave	Shift+=
Lower pitch one semitone	- (not numeric keypad)
Lower pitch one cent	Ctrl+-
Lower pitch one octave	Shift+-
Reset pitch	Ctrl+Shift+= or Ctrl+Shift+-
Select next take	T
Select previous take	Shift+T
Convert cut to transition	Numeric Keypad / Numeric Keypad * Numeric Keypad -
Convert transition to cut	Ctrl+Numeric Keypad /
Open in audio editor	Ctrl+E

Red Eye Reduction

The following commands apply to the Red Eye Reduction dialog.

Command	Keyboard Shortcut
Scroll Left/Right	Right/Left Arrow Press Shift to scroll quickly
Scroll Up/Down	Up/Down Arrow Press Shift to scroll quickly
Jump to top/bottom of image	Page Up/Down Shift+Home/End
Jump to left/right edge of image	Home/End Shift+Page Up/Down
Jump to horizontal center of image	\ Numeric Keypad *
Jump to vertical center of image	Shift+\ Shift+Numeric Keypad *
Jump to horizontal and vertical center of image	C

Playback, recording, and preview

Command	Keyboard Shortcut
Arm track for record	Ctrl+Alt+R
Arm for record and set recording path	Ctrl+Alt+Shift+R
Record	Ctrl+R
Looped playback	Q or Ctrl+Shift+L
Play from start	Shift+Spacebar or Shift+F12
Start playback	Spacebar
Play from any window	Ctrl+Spacebar or F12
Play/pause	Enter or Ctrl+F12
Stop playback	Spacebar or Esc
Go to start of project	Ctrl+Home
Go to end of project	Ctrl+End
Go to previous frame	Alt+Left Arrow
Go to next frame	Alt+Right Arrow
Dim (attenuate) master bus output	Ctrl+Shift+F12
Preview cursor position. You can specify the length of the time that is previewed using the CURSOR PREVIEW DURATION box on the Editing tab of the Preferences dialog.	Numeric Keypad 0
Scrub playback	J, K, or L
Selectively prerender video	Shift+M
Build dynamic RAM preview	Shift+B
Toggle external monitor preview	Alt+Shift+4

Command	Keyboard Shortcut
Generate MIDI timecode	F7
Generate MIDI clock	Shift+F7
Trigger from MIDI timecode	Ctrl+F7
Enable multicamera editing	Ctrl+Shift+D
Choose multicamera take	1 - 9
Choose multicamera take with crossfade	Ctrl+1 - 9

Timeline and track list

Command	Keyboard Shortcut
Insert new audio track	Ctrl+Q
Insert new video track	Ctrl+Shift+Q
Insert adjustment track	Ctrl+Shift+Alt+Q
Change audio track volume or video track compositing level (when focus is on track list)	Ctrl+Left/Right Arrow
Change audio track panning or video track fade-to-color setting (when focus is on track list and automation controls are visible)	Ctrl+Shift+Left/Right Arrow
Mute selected tracks	Z
Mute selected track and remove other tracks from mute group	Shift+Z
Solo selected tracks	X
Solo selected track and remove other tracks from solo group	Shift+X
Mute selected track group	Ctrl+Alt+Z
Mute selected track group and remove other track groups from the mute group	Ctrl+Alt+Shift+Z
Solo selected track group	Ctrl+Alt+X
Solo selected track group and remove other track groups from the solo group	Ctrl+Alt+Shift+X
Override snapping (if snapping is on) or enable snapping (if snapping is off)	Shift+drag
Quantize to frames	Alt+F8
Enable/disable snapping	F8
Snap to grid	Ctrl+F8

Command	Keyboard Shortcut
Snap to markers	Shift+F8
Snap to all events	Ctrl+Shift+F8
Post-edit ripple affected tracks	F
Post-edit ripple affected tracks, bus tracks, markers, and regions	Ctrl+F
Post-edit ripple all tracks, markers, and regions	Ctrl+Shift+F
Auto ripple mode	Ctrl+L
Automatic crossfades	Ctrl+Shift+X
Render to new track	Ctrl+M
Group selected events	G
Ungroup selected events	U
Ignore event grouping	Ctrl+Shift+U
Clear group without deleting events	Ctrl+U
Select all events in group	Shift+G
Insert/show/hide track volume envelope	V
Remove track volume envelope	Shift+V
Insert/show/hide track panning envelope	P
Remove track panning envelope	Shift+P
Cycle through effect automation envelopes	E and Shift+E
Show/hide envelopes	Ctrl+Shift+E
Adjust envelope point up/down by one pixel	Select envelope point and hold the mouse button; press 8 or 2 on the numeric keypad

Command	Keyboard Shortcut
Adjust envelope point left /right by one pixel	Select envelope point and hold the mouse button; press 4 or 6 on the numeric keypad
Adjust envelope point value in fine increments without changing the point's timeline position	Ctrl+ drag envelope point or segment
Adjust envelope point value in normal increments without changing the point's timeline position	Ctrl+Alt+ drag envelope point or segment
Adjust envelope point's timeline position without changing its value	Alt+ drag
Insert command marker	C
Insert marker	M
Insert region	R
Insert CD track region	N
Insert CD track index	Shift+N

Trimmer commands

The following commands apply to the Trimmer window. Many of the shortcuts that apply to the timeline also work in the Trimmer. This list highlights commands unique to the Trimmer.

Command	Keyboard Shortcut
Add media from cursor: adds the current selection to the timeline as an event; if there is no selection in the Trimmer, the entire clip is used.	A
Add media to cursor	Shift+A
Transfer time selection from timeline to Trimmer after cursor	T
Transfer time selection from timeline to Trimmer before cursor	Shift+T
Toggle selected stream: audio/video/both	Tab
Toggle audio/video stream height	Ctrl+Shift+ Up/Down Arrow
Sort Trimmer history	H
Clear Trimmer history	Ctrl+Shift+H
Remove current media from Trimmer history	Ctrl+H
Save markers/regions	S
Toggle automatic marker/region saving	Shift+S
Open in audio editor	Ctrl+E
Show video in Video Preview window	Ctrl+P

Track Motion

The following commands apply to the Track Motion and 3D Track Motion windows.

Command	Keyboard Shortcut
Change 3D layout	1-6 (not numeric keypad)
Lock aspect ratio	A
Scale about center	C
Edit in object space	O
Prevent movement	X, Y, and Z
Prevent scaling	Shift+X, Shift+Y, and Shift+Z
Enable snapping	F8
Enable rotation	Shift+F8

Surround Panner

Add Ctrl to the following shortcuts if you want to move the pan point in fine increments.

Command	Keyboard Shortcut
Constrain motion to a line through the center of the Surround Panner	Shift+drag the pan point (only when MOVE FREELY ✥ is selected)
Constrain motion to a constant radius from the center	Alt+drag the pan point (only when MOVE FREELY ✥ is selected) Alt+mouse wheel
Constrain motion to the maximum circle that will fit in the Surround Panner	Alt+Shift+drag the pan point (only when MOVE FREELY ✥ is selected) Alt+Shift+mouse wheel
Move the pan point forward/back (when the pan point is selected)	Up/Down Arrow Page Up/Page Down Mouse wheel
Move the pan point left/right (when the pan point is selected)	Left/Right Arrow Shift+Page Up/Page Down Shift + mouse wheel forward/back
Move the pan point to a corner, edge, or center of the Surround Panner (when the pan point is selected and Num Lock is on)	Numeric Keypad
Move the pan point to a corner on the largest circle that will fit in the Surround Panner (when the pan point is selected and Num Lock is on)	Ctrl+Numeric Keypad 1,3,7,9

Mixing Console

Command	Keyboard Shortcut
Rename selected channel	F2
Insert new audio track	Ctrl+Q
Cycle default/narrow/wide channel strips	D/N/W
Hide the selected channel strip	Shift+H
Show the Channel List pane	Shift+C
Show/hide all channel strips	Q
Show/hide audio bus channel strips	U
Show/hide audio track channel strips	A
Show/hide assignable effects channel strips	E
Show/hide master bus channel strip	T
Show/hide preview channel strip	P
Show/hide fader ticks	Shift+T
Show/hide control region labels	Shift+L
Show/hide Faders control region	F
Show/hide Insert FX control region	I
Show/hide I/O control region	H
Show/hide Meters control region	M
Show/hide Sends control region	S
Adjust selected fader	Up/Down Arrow
Adjust left channel of stereo fader	Shift+Up/Down Arrow
Adjust right channel of stereo fader	Ctrl+Up/Down Arrow

Miscellaneous

Command	Keyboard Shortcut
Application Help	F1
What's this help	Shift+F1
Shortcut menu	Shift+F10
Make fine fader/slider adjustments	Ctrl+drag
Change relative keyframe spacing	Alt+drag keyframes
Move region without changing length	Alt+drag region tag

Multimedia keyboard

Command	Shortcut
Play/Pause	Play/Pause
Play from start	Shift+Play/Pause
Stop	Stop
Mute track	Mute
Mute track and remove other tracks from mute group	Shift+Mute
Solo track	Ctrl+Mute
Solo track and remove other tracks from solo group	Ctrl+Shift+Mute
Change audio track volume or video track compositing level (when focus is on track list)	Ctrl+Volume Up/Down
Change audio track panning or video track fade-to-color setting (when focus is on track list)	Shift+Volume Up/Down
Change track focus	Next/Prev Track

Mouse wheel shortcuts

Command	Shortcut
Zoom in/out	Wheel
Scroll vertically	Ctrl+wheel
Scroll horizontally	Shift+wheel
Move the cursor in small increments Trim the selected event edge one pixel (if you're in edge-trimming mode) Adjust scrub rate during playback	Ctrl+Shift+wheel
Move the cursor by frames Trim the selected event edge one frame (if you're in edge-trimming mode) Adjust scrub rate during playback	Ctrl+Alt+Shift+wheel
Auto-scroll	Click wheel button and move mouse
Move fader/slider In plug-in windows, click the control first to give it focus.	Hover over handle and use wheel
Move fader/slider in fine increments	Ctrl+hover over fader and use wheel

Glossary

µ-Law

µ-Law

µ-Law (mu-Law) is a companded compression algorithm for voice signals defined by the Geneva Recommendations (G.711). The G.711 recommendation defines µ-Law as a method of encoding 16-bit PCM signals into a non-linear 8-bit format. The algorithm is commonly used in European and Asian telecommunications. µ-Law is very similar to A-Law, however, each uses a slightly different coder and decoder.

Adaptive Delta Pulse Code Modulation (ADPCM)

Adaptive Delta Pulse Code Modulation (ADPCM)

A method of compressing audio data. Although the theory for compression using ADPCM is standard, there are many different algorithms employed. For example, Microsoft's ADPCM algorithm is not compatible with the International Multimedia Association's (IMA) approved ADPCM.

A-Law

A-Law

A compounded compression algorithm for voice signals defined by the Geneva Recommendations (G.711). The G.711 recommendation defines A-Law as a method of encoding 16-bit PCM signals into a non-linear 8-bit format. The algorithm is commonly used in United States' telecommunications. A-Law is very similar to µ-Law, however, each uses a slightly different coder and decoder.

Aliasing

Aliasing

A type of distortion that occurs when digitally recording high frequencies with a low sample rate. For example, in a motion picture, when a car's wheels appear to slowly spin backward while the car is quickly moving forward, you are seeing the effects of aliasing. Similarly when you try to record a frequency greater than one half of the sampling rate (the Nyquist Frequency), instead of hearing a high pitch, you may hear a low-frequency rumble.

To prevent aliasing, an anti-aliasing filter is used to remove high-frequencies before recording. Once the sound has been recorded, aliasing distortion is impossible to remove without also removing other frequencies from the sound. This same anti-aliasing filter must be applied when resampling to a lower sample rate.

Alpha Channel

Alpha Channel

Alpha is a fourth channel that determines how transparency is handled in an image file. The RGB channels are blended to determine each pixel's color, and the corresponding alpha channel determines each pixel's transparency. The alpha channel can have up to 256 shades of gray: 0 represents a transparent pixel, 255 represents an opaque pixel, and intermediate values are semitransparent.

Amplitude Modulation (AM)

Amplitude Modulation (AM)

A process whereby the amplitude (loudness) of a sound is varied over time. When varied slowly, a tremolo effect occurs. If the frequency of modulation is high, many side frequencies are created which can strongly alter the timbre of a sound.

Analog

Analog

When discussing audio, this term refers to a method of reproducing a sound wave with voltage fluctuations that are analogous to the pressure fluctuations of the sound wave. This is different from digital recording in that these fluctuations are infinitely varying rather than discrete changes at sample time. See "Quantization."

Anchor Point

Anchor Point

The anchor point is the fixed reference position around which transformations like cropping, rotation, or scaling are performed.

In cropping, the opposite handle becomes the anchor; for rotation, the anchor determines the center of the rotation effect.

Aspect Ratio

Aspect Ratio

The aspect ratio is the proportional relationship between the width and height of a video frame. It defines how the video content fills the screen or display area.

Common values include **16:9** for widescreen, **4:3** for standard TV, or **9:16** for vertical mobile videos. Maintaining a consistent aspect ratio avoids black bars (letterboxing or pillarboxing) or unwanted cropping.

For example, NTSC DV footage has a frame size of 720×480 pixels. Dividing the width by the height gives 1.5. When multiplied by a pixel aspect ratio (e.g., 0.9091 for NTSC), the result is approximately 1.36:1 — a common display ratio.

Frame Size	Example
4:3 Standard Television 1.33:1 Aspect Ratio	
16x9 Widescreen Television 1.78:1 Aspect Ratio	
Academy Flat Theatrical Frame 1.85:1	
Academy Scope Theatrical Frame 2.35:1 Aspect Ratio	

Attack

Attack

The attack of a sound is the initial portion of the sound. Percussive sounds (drums, piano, guitar plucks) are said to have a fast attack. This means that the sound reaches its maximum amplitude in a very short time. Sounds that slowly swell up in volume (soft strings and wind sounds) are said to have a slow attack.

Audio Compression Manager (ACM)

Audio Compression Manager (ACM)

The Audio Compression Manager, from Microsoft, is a standard interface for audio compression and signal processing for the Windows operating system. The ACM can be used by software to compress and decompress .wav files.

Bandwidth

Bandwidth

When discussing audio equalization, each frequency band has a width associated with it that determines the range of frequencies that are affected by the EQ. An EQ band with a wide bandwidth will affect a wider range of frequencies than one with a narrow bandwidth.

When discussing network connections, refers to the rate of signals transmitted; the amount of data that can be transmitted in a fixed amount of time (stated in bits/second): a 56 Kbps network connection is capable of receiving 56,000 bits of data per second.

Beats Per Measure

Beats Per Measure

The time signature of a piece of music contains two pieces of information: the number of beats in each measure of music, and which note value gets one beat. uses this notion to determine the number of ticks to put on the time ruler above the track view and to determine the spacing when the ruler is displaying Measures & Beats.

Beats Per Minute (BPM)

Beats Per Minute (BPM)

The tempo of a piece of music can be written as a number of beats in one minute. If the tempo is 60 BPM, a single beat will occur once every second.

Bézier Curve

Bézier Curve

A Bézier curve allows smooth and precise animation transitions by adjusting the curve between keyframes with handles.

Locked tangents move symmetrically, while split tangents allow independent control on each side, offering advanced control over motion curves.

Bit

Bit

A bit is the most elementary unit in digital systems. Its value can only be 1 or 0, corresponding to a voltage in an electronic circuit. Bits are used to represent values in the binary numbering system. As an example, the 8-bit binary number 10011010 represents the unsigned value of 154 in the decimal system. In digital sampling, a binary number is used to store individual sound levels, called samples.

Bit Depth

Bit Depth

The number of bits used to represent a single sample. software uses either 8, 16 or 24-bit samples. Higher values will increase the quality of the playback and any recordings that you make. While 8-bit samples take up less memory (and hard disk space), they are inherently noisier than 16 or 24-bit samples.

Brightness

Brightness

Adjusting brightness adds or subtracts values from the color channels in an image to make the image lighter or darker. The maximum brightness setting adds 255 (pure white), and the minimum setting adds 0 (pure black).

Bus

Bus

A virtual pathway where signals from tracks and effects are mixed. A bus's output is a physical audio device in the computer where the signal is routed. The configuration of busses is saved with the project whereas the routing of busses to hardware is saved with the system. In this way, projects can be easily moved from one system to another without modifying the original layout of the project.

Byte

Byte

Refers to a set of 8 bits. An 8-bit sample requires one byte of memory to store, while a 16-bit sample takes two bytes of memory to store.

CCD

CCD

Charge coupled device. The image sensor in a digital camera.

Chroma

Chroma

The values that convey chrominance information.

Chrominance

Chrominance

The color content of an image without respect to its brightness.

Clipboard

Clipboard

The clipboard is where data that you have cut or copied is stored. You can then paste the data back into a different location on the timeline or paste it into other applications, such as Microsoft Word, or another instance of .

Clipping

Clipping

Clipping is what occurs when the amplitude of a sound is above the maximum allowed recording level. In digital systems, clipping is seen as a clamping of the data to a maximum value, such as 32,767 in 16-bit data. Clipping causes sound to distort.

CODEC

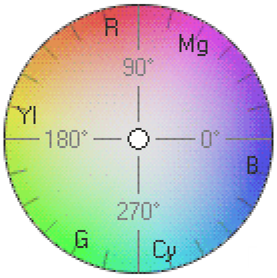
CODEC

An acronym for Coder/Decoder. Commonly used when working with data compression.

Complementary Color

Complementary Color

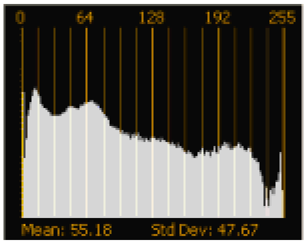
Complementary colors are colors that are 180 degrees apart on the color wheel. In the following image, you can see that red and cyan are complementary colors, as are magenta and green, and blue and yellow.



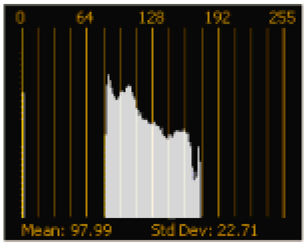
Contrast

Contrast

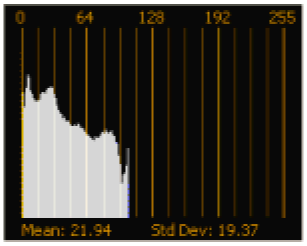
Adjusting contrast multiplies color values in an image to stretch the existing color channel values across a broader or narrower portion of the spectrum. The contrast center determines the anchor point for stretching.



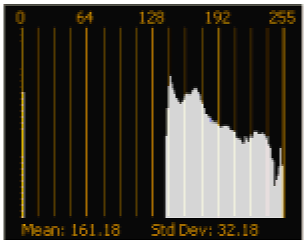
Histogram of original image.



Contrast decreased with a contrast center of 0.5: the histogram is squeezed into a narrower portion of the spectrum anchored from the center of the graph.



Contrast decreased with a contrast center of 0.0: the histogram is squeezed into a narrower portion of the spectrum anchored at the left edge of the graph.



Contrast decreased with a contrast center of 1.0: the histogram is squeezed into a narrower portion of the spectrum anchored at the right edge of the graph.

Controller Track

Controller Track

A controller track is an audio track that controls the behavior of one or more other tracks. In VEGAS Pro, it can be used in the Auto Ducking feature to control the volume of listener tracks. However, a controller track can also be used more broadly in audio production to trigger effects like sidechain compression or to adjust parameters such as equalization or filter settings on other tracks.

For example, when using Auto Ducking, the controller track (such as a voiceover) lowers the volume of the background music on listener tracks when speech is detected, ensuring clear vocal audio.

Crossfade

Crossfade

Mixing two pieces of media by fading one out as the other fades in.

Cutoff Frequency

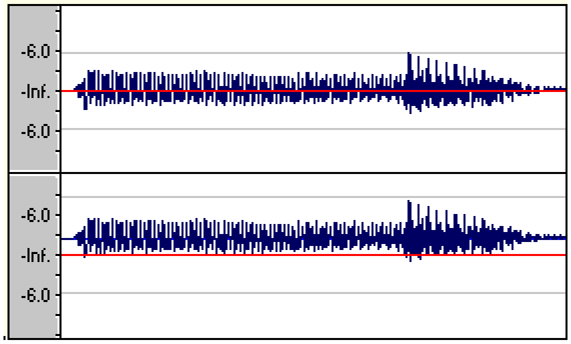
Cutoff frequency

The cutoff-frequency of a filter is the frequency at which the filter changes its response. For example, in a low-pass filter, frequencies greater than the cutoff frequency are attenuated while frequencies less than the cutoff frequency are not affected.

DC Offset

DC Offset

DC Offset occurs when hardware, such as a sound card, adds DC current to a recorded audio signal. This current causes the audio signal to alternate around a point above or below the normal -infinity dB (center) line in the sound file. To visually see if you have a DC offset present, you can zoom all the way into a sound file and see if it appears to be floating over the center line.



Decibel (dB)

Decibel (dB)

A unit used to represent a ratio between two numbers using a logarithmic scale. For example, when comparing the numbers 14 and 7, you could say 14 is two times greater than the number 7; or you could say 14 is 6 dB greater than the number 7. Engineers use the equation dB = 20 x log (V1/V2) when comparing two instantaneous values. Decibels are commonly used when dealing with sound because the ear perceives loudness in a logarithmic scale.

In , most measurements are given in decibels. For example, if you want to double the amplitude of a sound, you apply a 6 dB gain.

Device Driver

Device Driver

A program that enables the Windows operating system to connect different hardware and software. For example, a sound card device driver is used by software to control sound card recording and playback.

Digital Signal Processing (DSP)

Digital Signal Processing (DSP)

A general term describing anything that alters digital data. Digital Signal Processors alter the data after it has been digitized by using a combination of programming and mathematical techniques. DSP techniques are used to perform many effects such as equalization and reverb simulation.

Dithering

Dithering

The practice of adding noise to a signal to mask quantization noise.

Drag and Drop

Drag and Drop

A quick way to perform certain operations using the mouse in . To drag and drop, you click and hold a highlighted selection, drag it (hold the left-mouse button down and move the mouse) and drop it (let go of the mouse button) at another position on the screen.

Dynamic Range

Dynamic Range

The difference between the maximum and minimum signal levels. It can refer to a musical performance (high volume vs. low volume signals) or to electrical equipment (peak level before distortion vs. noise floor). For example, orchestral music has a wide dynamic range while thrash metal has a very small (always loud) range.

Endian (Little and Big)

Endian (Little and Big)

Little and Big Endian describe the ordering of multi-byte data that is used by a computer's microprocessor. Little Endian specifies that data is stored in a low to high-byte format; this ordering is used by the Intel microprocessors. Big Endian specifies that data is stored in a high to low-byte format; this ordering is used by the Motorola microprocessors.

Envelopes (Audio and Video)

Envelopes (Audio and Video)

Envelopes allow you to automate the change of a certain parameter over time. In the case of volume envelopes, you can create a fade out (which requires a change over time) by adding an envelope and creating an extra point to the line that indicates where the fade starts. Then you pull the end point of the envelope down to infinity.

Equalization (EQ)

Equalization (EQ)

The process by which certain frequency bands are raised or lowered in level. EQ has various uses. The most common use for users is to simply adjust the subjective timbral qualities of a sound.

Event

Event

An event is an occurrence of a media file on the timeline. Each event can contain more than one media file. Each media file in an event is called a take. An event also provides access to features that allow cropping, fade in and out, opacity, gain, and other tools to control and edit events. Events are divided into two broad categories: Video events and Audio events. Some of the tools are specific to the type of event: audio or video.

File Format

File Format

A file format specifies the way in which data is stored on your floppy disks or hard drive. In the Windows operating system, the most common file format is the Microsoft .WAV format. However, can read and write to many other file formats so you can maintain compatibility with other software and hardware configurations.

Frame Rate (Audio)

Frame Rate (Audio)

Audio uses frame rates only for the purposes of synching to video or other audio. In the latter case, the rate of 30 non-drop is typically used. In the former case 30 drop is usually used.

Frame Rate (Video)

Frame Rate (Video)

The speed at which individual images in the video are displayed on the screen during playback. A faster frame rate results in smoother motion in the video. The television frame rate in the US (NTSC) is 29.97 frames per second (fps). In many parts of Europe and Japan, the television standard is PAL at 25 fps.

Frequency Spectrum

Frequency Spectrum

The Frequency Spectrum of a signal refers to its range of frequencies. In audio, the frequency range is basically 20 Hz to 20,000 Hz. The frequency spectrum sometimes refers to the distribution of these frequencies. For example, bass-heavy sounds have a large frequency content in the low end (20 Hz - 200 Hz) of the spectrum.

Gamma

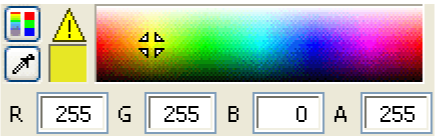
Gamma

Determines the brightness of the video and is used to compensate for differences between the source and output video and sometimes needs to be calibrated to match the source or destination. Higher gamma values result in lighter or brighter video as displayed on your computer's monitor.

Gamut

Gamut

Gamut refers to the complete range of something. In video editing, you want to ensure that your colors are within the acceptable range for your broadcast standard. When colors are outside the NTSC or PAL gamut, you can introduce image problems or noise into the video stream. You can use the video scopes to analyze your video before rendering and correct out-of-gamut colors with video plug-ins.



R 255 G 255 B 0 A 255

Hertz (Hz)

Hertz (Hz)

The unit of measurement for frequency or cycles per second (CPS).

In-Place Plug-In

In-Place Plug-In

An in-place plug-in processes audio data so that the output length always matches the input length. A non-in-place plug-in's output length need not match a given input length at any time: for example, Time Stretch, Gapper/Snipper, Pitch-Shift (without preserving duration), and some Vibrato settings can create an output that is longer or shorter than the input.

Insertion Point

Insertion Point

The insertion point (also referred to as the cursor position) is analogous to the cursor in a word processor. It is where pasted data will be placed or other data may be inserted depending on the operation.

Interpolation

Interpolation

Interpolation refers to the method used to calculate intermediate frames between two keyframes, determining how smoothly or abruptly the animation transitions.

VEGAS Pro supports both spatial and temporal interpolation, which can be fine-tuned using the Smoothness slider or curve presets.

Inverse Telecine (IVTC)

Inverse Telecine (IVTC)

Telecine is the process of converting 24 fps (cinema) source to 30 fps video (television) by adding pulldown fields. Inverse telecine, then, is the process of converting 30 fps (television) video to 24 fps (cinema) by removing pulldown.

Invert Data

Invert Data

Inverting sound data reverses the polarity of a waveform around its baseline. Inverting a waveform does not change the sound of a file; however, when you mix different sound files, phase cancellation can occur, producing a "hollow" sound. Inverting one of the files can prevent phase cancellation.

ISRC Code

ISRC Code

Industry Standard Recording Codes (ISRC) were designed to identify CD tracks. The ISRC code is a 12-character alphanumeric sequence in the following format:

Field	A	B	C	D	E
Sample ISRC	SE	T38	86	302	12

<table>
<tr><th>Field</th><th>Description</th></tr>
<tr><td>A</td><td>Country — Represents the recording's country of origin.</td></tr>
<tr><td>B</td><td>First Owner — Assigned ID for the producer of the project. Each country has a board that assigns these codes.</td></tr>
<tr><td>C</td><td>Year of Recording — Represents the year the recording was made.</td></tr>
<tr><td>D</td><td>Recording — Represents the recording's serial number made by the same producer in that year:
This value will use three digits (300-999) when the CD has 10 or more tracks.
This value will use four digits (0001-2999) when the CD has 9 or fewer tracks.</td></tr>
<tr><td>E</td><td>Recording Item (1 or 2 digits) Identifies tracks on a CD (each track can have a different ISRC code).</td></tr>
</table>

Keyframe

Keyframe

A keyframe marks the beginning or end of a change in an animation.

It is used to animate properties like position, opacity, rotation, and effects.

Listener Track

Listener Track

A listener track is an audio track that responds to the input or behavior of a controller track. In VEGAS Pro, listener tracks automatically lower their volume in response to the controller track in Auto Ducking. In a broader sense, listener tracks can be affected by other control mechanisms such as sidechain compression, where their audio properties change in reaction to the controller track’s input.

Luma

Luma

The values that convey luminance information.

Luminance

Luminance

The brightness of an image without respect to its color content.

Markers

Markers

Saved locations in the sound file. Markers are stored in the Regions List and can be used for quick navigation.

Masking

Masking

Masking is the process of isolating or hiding parts of a video frame to apply effects selectively.

In VEGAS Pro, you can create masks using shapes or Bézier paths and refine them with feathering or transformation controls.

Media Control Interface (MCI)

Media Control Interface (MCI)

A standard way for applications to communicate with multimedia devices like sound cards and CD players. If a device has a MCI device driver, it can easily be controlled by most multimedia software.

Media Player

Media Player

A Microsoft Windows program that can play digital sounds or videos using MCI devices. Media Player is useful for testing your sound card setup.

MIDI Clock

MIDI Clock

A MIDI device specific timing reference. It is not absolute time like MTC, instead it is a tempo dependent number of "ticks" per quarter note. MIDI Clock is convenient for synching devices that need to do tempo changes mid-song. supports MIDI Clock out, but does not support MIDI Clock in.

MIDI Port

MIDI Port

A MIDI Port is the physical MIDI connection on a piece of MIDI gear. This port can be a MIDI in, out or through. Your computer must have a MIDI to output MIDI Time Code to an external device or to receive MIDI Time code from an external device.

MIDI Time Code (MTC)

MIDI Time Code (MTC)

MTC is an addendum to the MIDI 1.0 Specification and provides a way to specify absolute time for synchronizing MIDI capable applications. Basically, it is a MIDI representation of SMPTE timecode.

Mix

Mix

A function performs inherently by adding events to multiple audio tracks.

Multiple Stereo

Multiple Stereo

A mixer configuration that allows you to assign individual tracks to any number of stereo output busses. In single stereo mode, all tracks go out the same stereo bus. Multiple stereo configuration allows you to keep your signals from the tracks discrete if you want them to be.

Musical Instrument Device Interface (MIDI)

Musical Instrument Device Interface (MIDI)

A standard language of control messages that provides for communication between any MIDI compliant devices. Anything from synthesizers to lights to factory equipment can be controlled via MIDI. utilizes MIDI for synchronization purposes.

Noise-shaping

Noise-shaping

Noise-shaping is a technique that can minimize the audibility of quantization noise by shifting its frequency spectrum. For example, in 44,100 Hz audio quantization noise is shifted towards the Nyquist Frequency of 22,050 Hz.

Nondestructive Editing

Nondestructive Editing

This type of editing involves a pointer-based system of keeping track of edits. When you delete a section of audio in a nondestructive system, the audio on disk is not actually deleted. Instead, a set of pointers is established to tell the program to skip the deleted section during playback.

Normalize

Normalize

Refers to raising the volume so that the highest level sample in the file reaches a user defined level. Use this function to make sure you are fully utilizing the dynamic range available to you.

Nyquist Frequency

Nyquist Frequency

The Nyquist Frequency (or Nyquist Rate) is one half of the sample rate and represents the highest frequency that can be recorded using the sample rate without aliasing. For example, the Nyquist Frequency of 44,100 Hz is 22,050 Hz. Any frequencies higher than 22,050 Hz will produce aliasing distortion in the sample if no anti-aliasing filter is used while recording.

Opacity

Opacity

Opacity defines the transparency level of a visual element on the timeline.

Adjusting opacity allows blending of layers, creating fade effects, or making elements fully transparent.

Pan

Pan

In video editing, "Pan" refers to a horizontal camera movement, where the camera rotates along the X-axis, typically from left to right or vice versa, without changing its physical position. This effect can be digitally simulated in post-production to create movement within a static shot, such as in the Ken Burns effect, where pan and zoom are applied to still images.

In audio editing, "Pan" refers to the placement of a sound within the stereo field, allowing audio to be positioned from the left channel to the right channel. Panning is a key part of audio mixing, enabling a sense of space and direction by distributing different audio elements across the stereo spectrum.

Peak Data File

Peak Data File

The file created by when a file is opened for the first time. This file stores the information regarding the graphic display of the waveform so that opening a file is almost instantaneous in direct edit mode. This file is stored in the directory that the file resides in and has a .sfk extension.

Pixel Aspect

Pixel Aspect

The pixel aspect determines whether the pixels are square (1.0) which refers to computers, or rectangular (settings other than 1.000) which typically refers to televisions. The pixel aspect ratio, together with the frame size, determine the frame aspect ratio.

Plug-In

Plug-In

An effect that can be added to the product to enhance the feature set. supports all DirectX plug-ins. The built-in EQ, Compression and Dithering effects are also considered plug-ins because they work in other DirectX-compatible applications.

Plug-In Chain

Plug-In Chain

Plug-ins can string together into a chain so that the output of one effect feeds into the input of another. This allows for complex effects that could not otherwise be created.

Pre-roll/Post-roll

Pre-roll/Post-roll

Pre-roll is the amount of time elapsed before an event occurs. Post-roll is the amount of time after the event. The time selection defines the pre- and post-roll when recording into a selected event.

Preset

Preset

A snapshot of the current settings in a plug-in. Presets are created and named so that you can easily get back to a sound that you have previously created.

Pulse Code Modulation (PCM)

Pulse Code Modulation (PCM)

PCM is the most common representation of uncompressed audio signals. This method of coding yields the highest fidelity possible when using digital storage.

Punch-In

Pulldown

In telecine conversion, fields are added to convert 24 fps film to 30 fps video. In 2-3 pulldown, for example, the first frame is scanned into two fields, the second frame is scanned into three fields, and so on for the duration of the film. 2-3 pulldown is the standard for NTSC broadcasts of 24p material. Use 2-3 pulldown when printing to tape, but not when you intend to use the rendered video in a project.

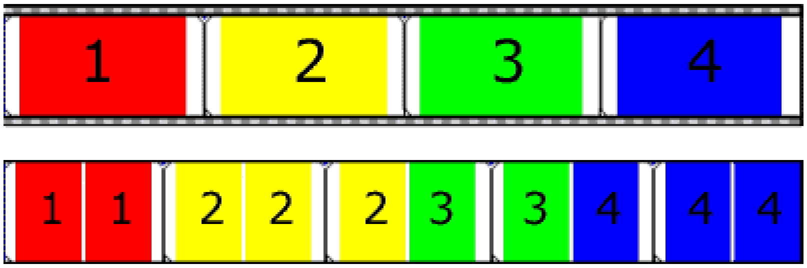


FIGURE *24 fps film (top) and resulting NTSC video with 2-3 pulldown fields (bottom)*

Use 2-3-3-2 pulldown when you plan to use your rendered video as source media. When removing 2-3-3-2 pulldown, Frame three is discarded, and the pulldown fields in the remaining frames are merged:

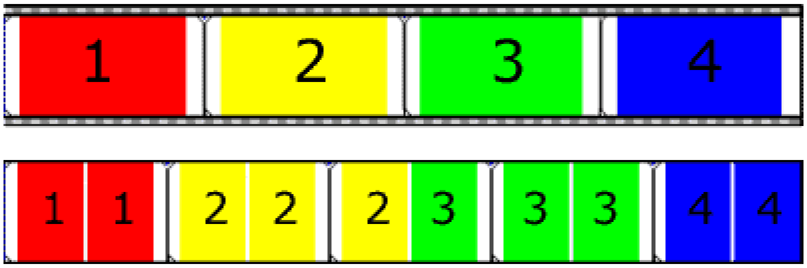


FIGURE *24 fps film (top) and resulting NTSC video with 2-3-3-2 pulldown fields (bottom)*

Quadraphonic

Punch-In

Punching-in during recording means automatically starting and stopping recording at user-specified times.

Quantization

Quadraphonic

A mixing implementation that allows for four discrete audio channels. These are usually routed to two front speakers and two back speakers to create immersive audio mixes.

Quantization Noise

Quantization

The process by which measurements are rounded to discrete values. Specifically with respect to audio, quantization is a function of the analog to digital conversion process. The continuous variation of the voltages of an analog audio signal are quantized to discrete amplitude values represented by digital, binary numbers. The number of bits available to describe these values determines the resolution or accuracy of quantization.

Region

Quantization Noise

A result of describing an analog signal in discrete digital terms. This noise is most easily heard in low-resolution digital sounds that have low bit depths and is similar to a "shhhhh" type sound while the audio is playing. It becomes more apparent when the signal is at low levels, such as when doing a fade out.

Resample

Region

A subsection of a sound file. You can define any number of regions in a project or media file.

Ripple

Ripple

"Ripple" refers to the automatic adjustment or linking of adjacent elements to accommodate changes. So, when you edit events on a track and activate the Ripple function, adjacent keyframes and envelopes on the relevant tracks are automatically adjusted - depending on the settings - to ensure the consistency of the editing.

Ruler Tags

Resample

The act of recalculating samples in a sound file at a different rate than the file was originally recorded. If a sample is resampled at a lower rate, sample points are removed from the sound file decreasing its size, but also decreasing its available frequency range. When resampling to a higher sample rate, extra sample points in the sound file are interpolated. This increases the size of the sound file but does not increase the quality. When down-sampling one must be aware of aliasing.

Ruler, Time

Ruler Tags

Small tab-shaped controls above the time ruler that represent the location of markers, regions, and loop points in the waveform display.

Sample

Ruler, Time

The time ruler is the area on a data window above the tracks display window that shows the horizontal axis units.

Sample Rate

Sample

The word sample is used in many different (and often confusing) ways when talking about digital sound. Here are some of the different meanings:

A discrete point in time that a sound signal is divided into when digitizing. For example, an audio CD-ROM contains 44,100 samples per second. Each sample is really only a number that contains the amplitude value of a waveform measured over time.

A sound that has been recorded in a digital format; used by musicians who make short recordings of musical instruments to be used for composition and performance of music or sound effects. These recordings are called samples. In this help system, we try to use sound file instead of sample whenever referring to a digital recording.

The act of recording sound digitally, i.e. to sample an instrument means to digitize and store it.

Sample Value

Sample Value

The sample value (also referred to as sample amplitude) is the number stored by a single sample. In 16-bit audio, these values range from -32768 to 32767. In 8-bit audio, they range from -128 to 127. The maximum allowed sample value is often referred to as 100% or 0 dB.

Shortcut Menu

Shortcut Menu

A context-sensitive menu that appears when you right-click on certain areas of the screen. The functions available in the shortcut menu depend on the object being clicked on as well as the state of the program. As with any menu, you can select an item from the shortcut menu to perform an operation. Shortcut menus are used frequently for quick access to many commands. An example of a shortcut menu can be found by right-clicking on any waveform display in a data window.

Signal-to-Noise Ratio

Signal-to-Noise Ratio

The signal-to-noise ratio (SNR) is a measurement of the difference between a recorded signal and noise levels. A high SNR is always the goal. The maximum signal-to-noise ratio of digital audio is determined by the number of bits per sample. In 16-bit audio, the signal to noise ratio is 96 dB while in 8-bit audio its 48 dB. However, in practice this SNR is never achieved, especially when using low-end electronics.

Small Computer Systems Interface (SCSI)

Small Computer Systems Interface (SCSI)

A standard interface protocol for connecting devices to your computer. The SCSI bus can accept up to seven devices at a time including CD ROM drives, hard drives and samplers.

Society of Motion Picture and Television Engineers (SMPTE)

Society of Motion Picture and Television Engineers (SMPTE)

SMPTE timecode is used to synchronize time between devices. The timecode is calculated in Hours:Minutes:Second:Frames, where Frames are fractions of a second based on the frame rate. Frame rates for SMPTE timecode are 24, 25, 29.97 and 30 frames per second.

Sound Card

Sound Card

The sound card is the audio interface between your computer and the outside world. It is responsible for converting analog signals to digital and vice versa. will work with any Windows-compatible sound card.

Stereo

Stereo

Mixer implementation that includes two discrete channels

Surround

Surround

5.1 surround is a mixer implementation that includes six discrete channels

Telecine

Telecine

The process of creating 30 fps video (television) from 24 fps film (cinema).

Tempo

Tempo

Tempo is the rhythmic rate of a musical composition, usually specified in beats per minute (BPM).

Time Format

Time Format

The format used to display the time ruler and selection times. These include Time, Seconds, Frames, and all standard SMPTE frame rates. The status format is set for each sound file individually.

Track

Track

A discrete timeline for audio data. Audio events sit on audio tracks and determine when a sound starts and stops. Multiple audio tracks are mixed together to give you a composite sound that you hear through your speakers.

Trim/Crop

Trim/Crop

A function that will delete all data in a sound file outside of the current selection.

Undo Buffer

Undo Buffer

This is the temporary file created before you do any processing to a project. This undo buffer allows the ability to rewrite previous versions of the project if you decide you do not like changes you have made to the project. This undo buffer is erased when the file is closed or the CLEAR UNDO HISTORY command is invoked.

Undo/Redo

Undo/Redo

These commands allow you to change a project back to a previous state, when you do not like the changes you have made, or reapply the changes after you have undone them. The ability to Undo/Redo is only limited by the size of your hard drive.

Undo/Redo History

Undo/Redo History

A list of all of the functions that have been performed to a file that are available to be undone or redone. Undo/Redo History gives you the ability to undo or redo multiple functions as well as preview the functions for quick A/B-ing of the processed and unprocessed material.

Video for Windows (AVI)

Video for Windows (AVI)

A file format for digital video.

Virtual MIDI Router (VMR)

Virtual MIDI Router (VMR)

A software-only router for MIDI data between programs. software uses the VMR to receive MIDI timecode and send MIDI clock. No MIDI hardware or cables are required for a VMR, so routing can only be performed between programs running on the same PC.

Zero-crossing

Zero-crossing

A zero-crossing is the point where a fluctuating signal crosses the zero-amplitude axis. By making edits at zero-crossings with the same slope, the chance of creating glitches is minimized. The fade edit edges setting is used to make zero crossing at event edges by fading the waveform to 0-amplitude over a short period of time.

Zipper noise

Zipper noise

Zipper noise occurs when you apply a changing gain to a signal, such as when fading out. If the gain does not change in small enough increments, zipper noise can become very noticeable. Fades are accomplished using 64-bit arithmetic, thereby creating no audible zipper noise.

Get Support and Assistance

Various support options are available for questions regarding operation, licensing, or technical issues. Depending on your concern, different paths lead to the appropriate help.

VEGAS Service Center

In the VEGAS Service Center, you can manage your products and account data. After logging in, the following features are available:

- View serial numbers and registrations
- Manage your account and personal information
- Submit support requests via a contact form
- Access information about license status and product activation

Go to Service Center

VEGAS Community

In the VEGAS Community, users support each other while working with VEGAS software. The platform offers:

- Product-specific discussion forums
- Practical tips and tutorials
- A comprehensive, user-maintained knowledge base

Go to MAGIX Community

Support Section

The **Support** area of the community includes an integrated search function available in German and English. It provides quick access to guides, tips, and frequently asked questions.

Go directly to the Community Support section